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UNIVERSITY BULLETIN

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SUPPLEMENT A TO NO. 2

# Arts, Philosophy and Science

of the

## OHIO STATE UNIVERSITY



November, 1905

COLUMBUS  
PUBLISHED MONTHLY BY THE UNIVERSITY

## THE CITY

— 2 —

# Days and Dates

1905.

Entrance Examinations, 8 A. M., Tuesday, Wednesday, Thursday and Friday, June 13, 14, 15 and 16.

Entrance Examinations, 8 A. M., Tuesday, Wednesday, Thursday and Friday, September 12, 13, 14 and 15.

First term begins—Registration Day—Tuesday, September 19.

President's Annual Address, 11 A. M., Friday, September 22.

Latest Date of Admission to candidacy for a degree at the Commencement of June, 1906, September 30, 1905.

First term ends Wednesday, December 20.

1906.

Second term begins—Registration Day—Tuesday, January 2.

Second term ends Friday, March 30.

Third term begins—Registration Day—Wednesday, April 4.

Final Examinations, Friday to Thursday, June 7-13.

Entrance Examinations, 8 A. M., Tuesday, Wednesday, Thursday and Friday, June 12, 13, 14 and 15.

Commencement, Wednesday, June 20.

## Organization

The Ohio State University, located in Columbus two miles north of the Union Station, is a part of the public educational facilities maintained by the State. It comprises six colleges:

The College of Agriculture and Domestic Science,  
The College of Arts, Philosophy, and Science,  
The College of Engineering,  
The College of Law,  
The College of Pharmacy,  
The College of Veterinary Medicine.

This bulletin of announcements is devoted exclusively to the work of the College of Arts, Philosophy, and Science.

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# The College of Arts, Philosophy and Science

This College comprises those courses of study that are designed to furnish a liberal education in the languages and literatures, the sciences, mathematics, philosophy, history, politics, administration, economics, sociology, commerce, and educational theory, as distinguished from the technical and professional courses which constitute the work of the other colleges.

## The Departments

The College of Arts, Philosophy, and Science includes the following departments: American History and Political Science, Anatomy and Physiology, Astronomy, Bacteriology, Botany, Chemistry, Economics and Sociology, Education, English, European History, Geology, Germanic Languages and Literatures, Greek Language and Literature, Latin Language and Literature, Mathematics, Metallurgy and Mineralogy, Military Science and Tactics, Philosophy, Physical Education, Physics, Romance Languages and Literatures, Zoology and Entomology. The following departments of other Colleges of the University offer a limited amount of work as elective studies in the College of Arts, Philosophy and Science: Civil Engineering, Domestic Economy, Drawing, Electrical Engineering, Law, Mechanical Engineering.

## The Graduate School

The graduate instruction given in the College of Arts, Philosophy and Science is organized in a Graduate School. A special bulletin describing the organization, admission requirements, and work of the Graduate School may be obtained on application to the Executive Office.

## Faculty and Instructors of the College of Arts, Philosophy and Science

REV. WILLIAM OXLEY THOMPSON, D. D., President of the University.  
JOSEPH VILLIERS DENNEY, B. A., Dean and Professor of English.  
WILLIAM HENRY SCOTT, LL. D., Professor of Philosophy.  
SIDNEY AUGUSTUS NORTON, LL. D., Emeritus Professor of Chemistry.

SAMUEL CARROLL DERBY, M. A., Professor of the Latin Language and Literature.

JOSIAH RENICK SMITH, M. A., Professor of the Greek Language and Literature.

BENJAMIN FRANKLIN THOMAS, Ph. D., Professor of Physics, and State Sealer of Weights and Measures.

GEORGE WELLS KNIGHT, Ph. D., Professor of American History and Political Science.

ROSSER DANIEL BOHANNAN, B. Sc., C. E., E. M., Professor of Mathematics.

ALBERT MARTIN BLEILE, M. D., Professor of Anatomy and Physiology.

WILLIAM ASHBROOK KELLERMAN, Ph. D., Professor of Botany.

BENJAMIN LESTER BOWEN, Ph. D., Professor of Romance Languages and Literatures.

ALLEN CAMPBELL BARROWS, A. M., D. D., Professor of English.

WILLIAM MCPHERSON, Ph. D., Professor of Chemistry.

HERBERT OSBORN, M. Sc., Professor of Zoology and Entomology, and Director of the Lake Laboratory.

HENRY CURWEN LORD, B. Sc., Professor of Astronomy, and Director of the Emerson McMillin Observatory.

GEORGE L. CONVERSE, Captain (retired), U. S. A., Professor of Military Science and Tactics.

CHARLES SMITH PROSSER, M. Sc., Professor of Geology.

JOHN ADAMS BOWNOCKER, D. Sc., Professor of Inorganic Geology, and Curator of the Museum.

ALFRED DODGE COLE, A. M., Professor of Physics, and Secretary of the Faculty.

WILBUR HENRY SIEBERT, M. A., Professor of European History.

LEWIS ADDISON RHOADES, Ph. D., Professor of Germanic Languages and Literatures.

JAMES EDWIN HAGERTY, Ph. D., Professor of Economics and Sociology.

CHARLES BRADFIELD MORREY, M. D., Professor of Bacteriology.

DAVID R. MAJOR, Ph. D., Professor of Education.

OLIVE B. JONES, University Librarian.

GEORGE WASHINGTON McCOARD, M. A., Associate Professor of Mathematics.

ARTHUR WINFRED HODGMAN, Ph. D., Associate Professor of the Classic Languages.

MAUD W. MARTIN, Director of Physical Education for Women.

JAMES ELLSWORTH BOYD, M. Sc., Associate Professor of Mathematics.

JOSEPH RUSSELL TAYLOR, M. A., Associate Professor of English.

CHARLES A. BRUCE, B. A., Associate Professor of Romance Languages.

WILLIAM EDWARDS HENDERSON, Ph. D., Associate Professor of Chemistry.

CHARLES WILLIAM FOULK, B. A., Associate Professor of Chemistry.

JOHN H. SCHAFFNER, M. Sc., Associate Professor of Botany.

JAMES STEWART HINE, B. Sc., Associate Professor of Entomology.

FRANCIS LEROY LANDACRE, B. A., Associate Professor of Zoology.

WALLACE STEDMAN ELDEN, Ph. D., Associate Professor of the Classic Languages.

MATTHEW BROWN HAMMOND, Ph. D., Associate Professor of Economics and Sociology.

WILLIAM LUCIUS GRAVES, M. A., Assistant Professor of English.

CHARLES LINCOLN ARNOLD, M. Sc., Assistant Professor of Mathematics.

KARL DALE SWARTZEL, M. Sc., Assistant Professor of Mathematics.

GEORGE H. MCKNIGHT, Ph. D., Assistant Professor of English.

FREDERICK EDWARD KESTER, M. A., Assistant Professor of Physics.

THOMAS HARVEY HAINES, Ph. D., Assistant Professor of Philosophy.

HARRY WALDO KUHN, Ph. D., Assistant Professor of Mathematics.

EDWIN F. CODDINGTON, Ph. D., Assistant Professor of Mathematics.

ALONZO HUBERT TUTTLE, B. A., Assistant Professor of American History.

EDGAR S. INGRAHAM, Ph. D., Assistant Professor of Romance Languages.

ROBERT F. EARHART, Ph. D., Assistant Professor of Physics.

GEORGE B. VILES, Ph. D., Assistant Professor of Germanic Languages and Literatures.

EDGAR HOLMES MCNEAL, Ph. D., Assistant Professor of European History.

HENRY R. SPENCER, M. A., Assistant Professor of American History and Political Science.

ARTHUR ERNEST DAVIES, Ph. D., Instructor in Philosophy.

BERTHOLD A. EISENLOHR, B. Ph., Instructor in Germanic Languages.

DON CARLOS HUDDLESON, G. Ph., Instructor in Physical Education.

MELVIN DRESBACH, M. Sc., Instructor in Anatomy and Physiology.

SAMUEL EUGENE RASOR, B. Sc., M. A., Instructor in Mathematics.

CATHERINE E. ANDREWS, M. A., B. Sc., Instructor in Chemistry.

MARY D. JAMES, A. B., Instructor in Romance Languages.

RAYMOND JESSE SEYMOUR, B. Sc., Assistant in Anatomy and Physiology.

BENJAMIN FRANKLIN MAAG, M. Sc., Assistant in Astronomy.

H. A. GLEASON, Assistant in Botany.

## Admission

The University is open on equal terms to both sexes.

Applicants for admission to the College of Arts, Philosophy and Science must be at least 16 years of age. Each must be provided with credentials of scholarship from the last institution with which he has been connected and with a certificate of good moral character.

There are two modes of admission to the College of Arts, Philosophy and Science—by examination and by certificate.

## Entrance Examinations

The entrance examinations for 1905 will be held on Tuesday, Wednesday, Thursday and Friday, June 13, 14, 15 and 16, and on Tuesday, Wednesday, Thursday and Friday, September 12, 13, 14 and 15. A part of the examinations may be taken in June and the remainder in September. *All applicants for admission who are not graduates of "accredited" or "recognized" schools must take examinations for admission.*

## Certificates

Applicants for admission may be admitted on presentation of properly indorsed certificates from secondary schools which have been "accredited" or "recognized" by the University.

## List of Accredited and Recognized Schools in Ohio

These lists are subject to change from year to year as schools are revisited. Persons are advised therefore to consult the latest bulletin.

Alliance R.	Collinwood A.
Akron A.	Columbus —
Ashland A.	Central A.
Ashtabula A.	East A.
Athens R.	North A.
Barnesville A.	South A.
Bedford R.	Columbus Grove R.
Bellaire R.	Conneaut R.
Bellefontaine A.	Corning R.
Bellevue R.	Coshcocton A.
Bethel Township, Miami Co. R.	Cuyahoga Falls R.
Bryan A.	Dayton A.
Bucyrus A.	Delaware A.
Caldwell R.	DeGraff R.
Cambridge A.	Dennison R.
Canal Dover R.	East Cleveland A.
Canal Winchester R.	East Liverpool A.
Canton A.	Elyria A.
Carey R.	Euclid R.
Celina R.	Findlay A.
Chagrin Falls R.	Fort Recovery R.
Chardon A.	Fostoria A.
Chillicothe A.	Fremont A.
Cincinnati —	Friends' Boarding School (Barnesville) R.
Hughes A.	Galion A.
Walnut Hills A.	Gallipolis A.
Woodward A.	Georgetown A.
Cincinnati Technical School A.	Germantown R.
Circleville A.	Glendale A.
Cleveland —	Glenville A.
Central A.	Gnadenhutten R.
East A.	Grand River Institute A.
Lincoln A.	Granville R.
South A.	Greenfield A.
West A.	Greenville A.
Clintonville R.	Groveport R.
Clyde A.	

Hamilton A.	New Philadelphia A.
Harmony Township (Clark County) R.	New Vienna R.
Hillsboro A.	Niles R.
Ironton A.	North Baltimore R.
Jackson A.	Norwalk A.
Jefferson A.	Norwood R.
Kenton A.	Oberlin R.
Kingsville A.	Olive Branch R.
Kirtland R.	Orrville R.
Lakeside A.	Osborne R.
Lakewood A.	Ottawa R.
Lancaster A.	O. S. & S. O. Home R.
Lebanon R.	Painesville A.
Leipsic R.	Pandora R.
Lima A.	Pataskala R.
Lockland A.	Perrysburg R.
Logan A.	Piqua A.
London A.	Plain City R.
Lorain R.	Pleasant Ridge R.
Madison R.	Pomeroy R.
Madisonville A.	Port Clinton R.
Mad River Township (Enon Village) R.	Portsmouth A.
Mansfield A.	Ravenna R.
Marietta A.	Reynoldsburg R.
Marion A.	Riley Township (Putnam Co.) R.
Martins Ferry A.	Ripley R.
Marysville A.	Salem A.
Massillon R.	Sandusky A.
Medina A.	Shelby R.
Mechanicsburg A.	Sidney A.
Miamisburg A.	Somerset R.
Middletown A.	South Charleston R.
Mt. Sterling R.	Spencerville R.
Mt. Vernon A.	Springfield A.
Napoleon R.	St. Marys A.
Nelsonville A.	St. Paris R.
Newark A.	Tiffin A.
New Bremen R.	Tippecanoe City R.
New Lexington R.	Toledo A.
New London A.	Troy A.
New Lyme Institute A.	Uhrichsville R.
	Urbana A.
	Upper Sandusky R.

Van Wert A.	Woodsfield R.
Wapakoneta R.	Wooster A.
Warren A.	Worthington R.
Washington C. H. A.	Wyoming A.
Wauseon R.	Xenia A.
Wellington A.	Youngstown A.
Wellsville A.	Zanesville A.
Willoughby A.	

#### ACCREDITED SCHOOLS OF OTHER STATES.

*Michigan.* Albion; Ann Arbor; Alpena; Adrian; Benton Harbor Collegiate Institute; Battle Creek; Bay City; Charlotte; Bessemer; Calumet; Coldwater; Detroit—Western, Eastern, Central, Home and Day, Detroit University; Delray; Escanaba; Ferris Institute; Flint; Grand Rapids Central; Hancock; Ionia; Ishpeming; Iron Mountain; Jackson; Kalamazoo; Lansing; Lake Linden; Ludington; Marshall; Manistee; Menominee; Michigan Seminary (Kalamazoo); Muskegon; Michigan Military Academy (Orchard Lake); Mt. Clemens; Marquette; Negaunee; Norway; Owosso; Port Huron; Niles; Pontiac; Petoskey; Sault Ste. Marie; Saginaw—West Side, East Side; St. Joseph; Traverse City; West Bay City; Ypsilanti.

*Indiana.* Elkhart City; Fort Wayne; Howe Military School; LaPorte; Michigan City; Richmond; South Bend; Shortridge and Manual Training, Indianapolis.

*Illinois.* Aurora (East); Aurora (West); Bloomington; Chicago—Austin, Calumet, Englewood, Hyde Park, Jefferson, John Marshall, Joseph Medill, Lake, Lake View, North West Division, Richard T. Crane, Manual Training, Robert A. Waller, South Chicago, Wendell Phillips, William McKinley; Decatur; De Kalb Tp.; Dixon; Elgin; Evanston Tp.; J. Sterling Norton Tp.; Joliet Tp.; La Salle, Peru Tp.; Lyons Tp. (La Grange); Moline; Oak Park Tp.; Ottawa Tp.; Peoria; Pontiac Tp.; Princeton; Rockford; Rock Island; Sterling Tp.; Thornton Tp. (Harvey).

*Iowa.* Boone; Burlington; Capital Park; Cedar Rapids; Charles City; Clinton; Corning; Council Bluffs; Davenport; Des Moines—East, North, West; Fort Dodge; Grinnell; Iowa City; Le Mars; Mason City; Muscatine; Ottumwa; Sheldon; Sioux City.

*Wisconsin.* Appleton; Ashland; Baraboo; Wayland Academy; Beaver Dam; Beloit; Berlin; Chippewa Falls; Eau Claire; Fond du Lac; Grand Rapids; Janesville; La Crosse; Madison; Marinette; Marshfield; Menominee; Milwaukee—East Division, West Division, South Division, Milwaukee Downer Seminary; New Richmond;

Oshkosh; Portage; Racine; Ripon; Sheboygan; Sparta; Stevens Point; Superior, Blaine, Dewey; Waukesha; Whitewater.

*Minnesota.* Duluth; Minneapolis—Central, East Side, North Side, South Side; Redwing; St. Paul—Central, Cleveland, Humboldt; Winona.

*Missouri.* Columbia; Kansas City Central, Kansas City Manual Training; Trenton; St. Louis—McKinley, St. Louis Central.

*Colorado.* Canon City; Cripple Creek; Denver, West Side; Durango; Ft. Collins; Golden; Grand Junction; Greely; La Junta; Leadville; Pueblo, Central; Pueblo, District No. 1; Trinidad; Victor.

*South Dakota.* Yankton.

*Certificates will not be accepted for admission to the College of Arts, Philosophy and Science from High Schools that are not named in the above lists.*

Certificates from "accredited" and "recognized" schools will be accepted in lieu of examination only under the following conditions:

(a) The certificate must state in detail the studies pursued, the text-books used, the amount of work done in each study, the amount of time devoted to it, and the fact that the applicant has successfully passed in the work.

(b) The certificate will be accepted for such studies only, or such part of each, as it shall show to have been satisfactorily accomplished.

(c) Every such certificate must be accompanied with a diploma or must show that the candidate has been graduated from the school from which he comes. *Blank certificates may be obtained by addressing the EXECUTIVE OFFICE, OHIO STATE UNIVERSITY, COLUMBUS.* Certificates should be filled out and returned to the University as early as possible after the close of the schools in June, and in any event not later than September 1.

## Requirements for Admission

The following is a tabular statement of the subjects accepted for admission to the College of Arts, Philosophy and Science. Fifteen units are required for unconditional admission. A unit is a course of study covering a school year of not less than thirty-five weeks with four or five periods of at least forty-five minutes each per

week. No one under 21 years of age\* will be admitted on less than 13 units. For *unconditional* admission the applicant must be prepared to offer:

A. Two units chosen from the following:

- (1) English Composition and Rhetoric.....1 unit.
- (2) English Classics ..... 1 unit.
- (3) English Literature ..... 1 unit.

B. Two units chosen from the following:

- (4) Civil Government .....  $\frac{1}{2}$  unit.
- (5) United States History .....  $\frac{1}{2}$  unit.
- (6) General History .....  $\frac{1}{2}$  or 1 unit.
- (7) Greek and Roman History..... $\frac{1}{2}$  or 1 unit.
- (8) English History .....  $\frac{1}{2}$  unit.

C. Three units as follows:

- (9) Algebra ..... } 3 units.
- (10) Plane and Solid Geometry ..... } 3 units.

D. Two units chosen from the following, including Physics:

- (11) Physics ..... 1 unit.
- (12) Physical Geography .....  $\frac{1}{2}$  unit.
- (13) Botany .....  $\frac{1}{2}$  unit.
- (14) Chemistry ..... 1 unit.
- (15) Physiology .....  $\frac{1}{2}$  unit.
- (16) Zoology .....  $\frac{1}{2}$  unit.
- (17) Geology .....  $\frac{1}{2}$  unit.
- (18) Astronomy .....  $\frac{1}{2}$  unit.

E. Six units chosen from the following; or two *extra* units, chosen from the preceding groups, and four units from the following:

- (19) Latin ..... 2 to 4 units.
- (20) Greek ..... 2 to 4 units.
- (21) German ..... 2 to 4 units.
- (22) French ..... 2 to 4 units.
- (23) Spanish ..... 2 to 4 units.

The extent and character of the work required in each subject mentioned above is as follows:

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\*A person twenty-one years of age, or over, who desires to pursue a special line of work and does not desire to become a candidate for a degree, may be admitted by vote of the Executive Committee to such classes as he is qualified to enter; provided, that if he afterwards becomes a candidate for a degree he must pass the requirements for admission at least one year before the degree is conferred. See "Admission to Special Studies."

(a) THE ENGLISH GROUP.

Two units are required in this group. An applicant presenting one unit in this group will be admitted conditionally, if his arrearage in all of the groups does not exceed two units. All arrearages must be made good within two years after admission.

(1) *English Composition and Rhetoric. One Unit.* Each applicant must be able to write clear and correct English, and no applicant will be accepted in English whose work is seriously defective in spelling, punctuation, grammar, and paragraph structure. The proper preparation for this part of the requirement is practice in composition, through the four preparatory years, with correction of themes by the teacher and revision by the pupil. Subjects for themes should not be taken exclusively from literature; a large share of the subjects should be based upon the pupil's observation and experience. Practice should be afforded in writing narration, description, exposition and argumentation. Applicants should be familiar with those principles of Rhetoric which are most helpful in elementary composition; viz., the principles of sentence structure, outlining, paragraphing, and choice of words. The amount and kind of work required is indicated in Scott and Denney's Composition-Rhetoric.

(2) *English Classics. One Unit.* The following books, or equivalents, should be read with sufficient care to insure a knowledge of their story-plot, or argument, their chief incidents, and their principal characters; so that pupils may discuss them intelligently. Four or five of these books should be examined closely in class with reference to structure and leading characteristics of style. The list (until 1906) is as follows: Shakespeare's *Merchant of Venice*, *Julius Caesar*, and *Macbeth*; Milton's *Lycidas*, *Comus*, *L'Allegro*, and *Il Penseroso*; Burke's *Conciliation with the Colonies*; Macaulay's *Essays on Milton and Addison*; The Sir Roger de Coverly Papers in *The Spectator*; Goldsmith's *The Vicar of Wakefield*; Coleridge's *The Ancient Mariner*; Scott's *Ivanhoe*; Carlyle's *Essay on Burns*; Tennyson's *The Princess*; Lowell's *The Vision of Sir Launfal*; George Eliot's *Silas Marner*.

(3) *English Literature. One Unit.* A good knowledge of the leading facts in the history of English Literature, as given in Scudder's English Literature, Johnson's History of English and American Literature or the Introductions by Pancoast, Painter, Halleck, or Newcomer; together with the reading of representative works of literature. This may be offered in lieu of subject (2), or as one of the extra units of group (e).

(b) THE HISTORY GROUP.

Two units are required in this group. An applicant presenting one unit in this group will be admitted conditionally, if his arrearage in all the groups does not exceed two units. All arrearages must be made good within two years after admission. Preparation in excess of two units in this group may be offered in lieu of the extra units of group (e).

(4) *Civil Government. One-half Unit.* A good knowledge of the origin, principles, forms and powers of the national, state and local governments is expected. Fiske's Civil Government, with a special study of the state from which the student comes, may serve to indicate the amount and kind of knowledge sought. No credit upon certificate will be given for Civil Government where it has been studied merely as incidental to, and as a part of, the work in United States history.

(5) *United States History. One-half Unit.* A good knowledge of the main facts and features of American history, especially of the period since 1750, is expected. Johnson's High School History of the United States, or McLaughlin's History of the American Nation, or Montgomery's Students' American History will serve to show the kind and amount of work sought. No credit upon certificate will be accorded in this subject for work done below the ninth grade.

(6) *General History. One Unit or One-half Unit.* Adams's European History, Myers' General History, or an equivalent.

(7) *Greek and Roman History. One-half Unit or One Unit.* Botsford's History of Greece and History of Rome, or equivalents.

(8) *English History. One-half Unit.* Montgomery's Leading Facts of English History, or equivalent.

(c) THE MATHEMATICS GROUP.

All of the Mathematics group is required. It counts three units. An applicant presenting *two* units in this group will be admitted conditionally, if his arrearage in all of the groups does not exceed two units. All arrearages must be made good within two years after admission.

(9) *Algebra.* Taylor's Elements of Algebra or an equivalent.

Special attention should be given to the four fundamental operations (single and system), factoring, highest common factor, lowest common multiple, fractions and fractional equations, involution, evolution, surds, complex quantities, quadratic equations, solved by factoring, by completing the square and the *general formula*. In the

last year of the high school a thorough review of the work just mentioned, and irrational equations, simultaneous quadratic equations, higher equations solvable by factoring, ratio, proportion, progressions, theory of exponents, binomial theorem for positive integral exponents and use of five-place tables of logarithms.

(10) *Geometry.* Venable, White, Wells, Wentworth, Beman and Smith, or an equivalent. Plane geometry with solution of originals. Solid and spherical geometry with solution of originals given in one of the text-books named above. Instead of solid and spherical geometry, the applicant may substitute *Plane Trigonometry*, as given in Lyman and Goddard's *Plane Trigonometry*.

(d) THE SCIENCE GROUP.

Two units are required in this group, including physics. An applicant presenting one unit in this group will be admitted conditionally, if his arrearage in all of the groups does not exceed two units. All arrearages must be made good within two years after admission. Preparation in excess of two units in this group may be offered in lieu of the extra units of group (e).

(11) *Physics. One Unit.* Gage's Elements, Carhart and Chute's Elements, Avery. One full year of daily work is necessary to meet the requirement in this subject. Laboratory training, to accompany the work of the text-book, is strongly recommended.

(12) *Physical Geography. One-half Unit.* Tarr's, Davis' or Gilbert and Brigham's *Physical Geography*.

(13) *Botany. One-half Unit.* Kellerman's *Elementary Botany* and *Spring Flora*, or an equivalent. The course should be divided between spring and fall.

(14) *Chemistry. One Unit.* Remsen's *Introduction to the Study of Chemistry*, or its equivalent. For laboratory work, McPherson's *Laboratory Exercises*, arranged to accompany Remsen's Chemistry. The course should consist of at least three recitations and four hour's laboratory work weekly. No credit in chemistry will be allowed for preparatory work less thorough than that outlined above.

(15) *Physiology. One-half Unit.* Martin's *Human Body* (brief course). No credit will be accorded in this subject for work done below the ninth grade.

(16) *Zoology. One-half Unit.* Jordan and Kellogg's *Animal Life*, Kellogg's *Elementary Zoology*, Davenport's *Introduction*; or equivalents, with laboratory work or field work.

(17) *Geology. One-half Unit.* Brigham's, Dana and Rice's (revised), or Tarr's may be used as texts. The recitations should

be supplemented by study of the geological phenomena and formations found in the vicinity of the school.

(18) *Astronomy.* One-half Unit. Young's Lessons in Astronomy, Comstock's Textbook in Astronomy or an equivalent.

(e) THE FOREIGN LANGUAGE GROUP.

Six units are required in this group; or two extra units from the preceding groups, and four units from this. A deficiency of two units is allowed in this group if the total arrearage in all of the groups does not exceed two units. All arrearages must be made good within two years after admission.

(19) *Latin.* Two to Four Units may be offered as follows: *Two units*—Pronunciation (Roman method); Grammar (an exact knowledge of the inflections); Cæsar, the first four books of the *De bello Gallico*, and Prose Composition. *Third unit*—Cicero, six orations of Cicero, including *Pro Lege Manilia*, and Prose Composition, Daniell, or Collar, or Jones, or Dodge and Tuttle. *Fourth unit*—Virgil, the first six books of the *Aeneid* with Prosody. Latin cannot be continued as a university study unless at least three units are offered for admission.

(20) *Greek.* Two to four units may be offered as follows: *Two units*—Grammar (Goodwin's preferred) and Prose Composition; or the first 100 lessons in White's Beginner's Greek Book. Reading: The first three books of Xenophon's *Anabasis*. At least two years should be devoted to this work. A third unit will be allowed for preparation in the fourth, fifth and sixth books of the *Anabasis* and three books of Homer's *Iliad*, and a fourth unit for additional reading in Greek.

(21) *German.* Two to four units may be offered as follows: *Two units*—The pupil should be able to read at sight, and to translate, if called upon, by way of proving his ability to read, a passage of very easy dialogue or narrative prose, help being given upon unusual words and constructions; to put into German short English sentences taken from the language of every-day life or based upon the text given for translation, and to answer questions upon the rudiments of grammar as defined below. During the first year the work should comprise: (1) Careful drill upon pronunciation; (2) the memorizing and frequent repetition of easy colloquial sentences; (3) drill upon the rudiments of grammar, that is, upon the inflection of the articles, of such nouns as belong to the language of every-day life, of adjectives, pronouns, weak verbs, and the more usual strong verbs, also upon the use of the more common prepositions, the simpler uses of the modal auxiliaries, and the elementary rules

of syntax and word-order; (4) abundant easy exercises designed not only to fix in mind the forms and principles of grammar, but also to cultivate readiness in the reproduction of natural forms of expression; (5) the reading of from 75 to 100 pages of graduated texts from a reader, with constant practice in translating into German easy variations upon sentences selected from the reading lesson (the teacher giving the English), and in the reproduction from memory of sentences previously read. During the second year the work should comprise: (1) The reading of from 150 to 200 pages of literature in the form of easy stories and plays; (2) accompanying practice, as before, in the translation into German of easy variations upon the matter read, and also in the off-hand reproduction, sometimes orally and sometimes in writing, of the substance of short and easy selected passages; (3) continued drill upon the rudiments of the grammar, directed to the ends of enabling the pupil, first, to use his knowledge with facility in the formation of sentences, and, secondly, to state his knowledge correctly in the technical language of grammar.

*Four Units.* The applicant must offer, in addition to the above, two additional years of instruction in German, including a review of the essentials of grammar. The rapid reading of at least 200 pages of prose; for example, the following: Heyse's L'Arrabiata, Riehl's Der Fluch der Schönheit, Hauff's Lichtenstein. The outlines of German literature should be mastered. In connection with this about 200 pages of German ballads and lyrics should be read. Some book like v. Klenze's Deutsche Gedichte might be used. A considerable portion of the prose and poetry should be read extemporaneously. About 50 pages in some prose composition should be translated. Text-books suggested are: v. Jagemann's, Poll's or Harris' Prose Composition. The work in composition should be carried on as far as possible in German. All exercises in this entire course, as far as they may be used without interfering with the thoroughness of the work, should be taken.

(22) *French.* *Two to four units* may be offered as follows: *Two units*—Applicants should be able to pronounce French accurately, to read at sight easy French prose, to put into French simple English sentences, taken from the language of every-day life, or based upon a portion of the French text read, and to answer questions on the rudiments of the grammar as defined below. Two years should be given to this preparation. During the first year the work should comprise: (1) Careful drill in pronunciation; (2) the rudiments of grammar, including the inflection of the regular

and the more common irregular verbs, the plural of nouns, and inflection of adjectives, participles and pronouns; the use of personal pronouns, common adverbs, prepositions and conjunctions; the order of words in the sentence, and the elementary rules of syntax; (3) abundant, easy exercises, designed not only to fix in the memory the forms and principles of grammar, but also to cultivate readiness in the reproduction of natural forms of expression; (4) the reading of from 100 to 175 duodecimo pages of graduated texts, with constant practice in translating into French easy variations of the sentences read (the teacher giving the English), and in reproducing from memory sentences previously read; (5) writing French from dictation. During the second year the work should comprise: (1) The reading of from 250 to 400 pages of easy modern (nineteenth century) prose in the form of stories, plays or historical or biographical sketches; (2) constant practice, as in the previous year, in translating into French easy variations upon the texts read; (3) frequent abstracts, sometimes oral and sometimes written, of portions of the text already read; (4) writing French from dictation; (5) continued drill upon the rudiments of grammar, with constant application in the construction of sentences; (6) mastery of the forms and use of pronouns, pronominal adjectives, of all but the rare irregular verb forms, and of the simpler uses of the conditional and subjunctive.

*Four units.* In addition to the above, the applicant should be able to read at sight, with the help of a vocabulary of special or technical expressions, difficult French not earlier than that of the seventeenth century; to write in French a short essay on some simple subject connected with the works read; to put into French a passage of easy English prose and carry on a simple conversation in French.

(23) *Spanish.* *Two to four units* may be offered as follows: *Two units.* Applicants should be able to pronounce Spanish accurately, to read at sight easy Spanish prose, to put into Spanish simple English sentences taken from the language of every-day life or based upon a portion of the Spanish text read, and to answer questions on the essentials of the grammar. Two years should be given to this preparation, the first year being spent mainly on the grammar with easy reading and oral practice; the second devoted to reading good modern Spanish, with grammatical analysis and exercises in writing. The texts read should be chiefly narrative and conversational prose, including one or more prose dramas of the present age.

*Four units.* In addition to the above, the applicant should be able to read at sight, with the help of a vocabulary of special or

technical expressions, difficult Spanish, whether prose or poetry; to write in Spanish a short essay on some simple subject connected with the works read, which shall show a thorough knowledge of syntax; to put into Spanish a passage of easy English prose, and to carry on a simple conversation in Spanish.

## Admission to Special Studies

Students who desire to pursue special lines of work and do not desire to become candidates for degrees, will be admitted on the following conditions:

1. The regular entrance requirements must be satisfied.
2. But applicants who are not less than twenty-one years of age after obtaining credit for the common English branches and for such other subjects as may be necessary to qualify them for the classes that they wish to enter, may, on the presentation of satisfactory reasons, be admitted to any class in the College; provided, that if any student who has been admitted on these conditions afterwards becomes a candidate for a degree, he shall pass the omitted entrance examinations at least twelve months before the degree is conferred.
3. On entering the College, students desiring to pursue special work are required to lay before the Executive Committee, for approval or modification, a written statement of the end they have in view, the studies proposed for the attainment of that end, and the probable period of attendance. Such students will be held as strictly to their accepted schemes of work as are the regular undergraduates to their courses of study.
4. Permission to enter as special undergraduates will be refused to all who fail to give satisfactory evidence of definiteness of purpose, and will be withdrawn whenever the conditions on which it was granted cease to exist.

## Admission to Advanced Standing

1. Applicants who do not come from some other university or college must first obtain admission to the College in the manner already described. They will then be examined on the undergraduate studies for which they ask credits.
2. Applicants who come from the collegiate department of an approved college, and who bring explicit and official certificates describing their course of study and scholarship, and also certificates of honorable dismissal, will be admitted without examination except

such as may be necessary to determine what credit they are to receive here for work done in the college from which they come.

## Admission to Graduate Work

A special bulletin devoted exclusively to the Graduate School may be obtained on application to the Executive Office.

## Requirements for Graduation

### UNDERGRADUATE COURSES OF STUDY

The work of the College of Arts, Philosophy, and Science is organized on the group-elective system. Several of the groups correspond in their chief studies and leading aims to the "courses" \* formerly offered, but with much greater flexibility and much freer opportunities for election. Many other "courses" having equally specific aims are also provided in the groups. The groups, so far as at present arranged, number fourteen. This number will be increased as reasonable demand may arise for new groups. The characteristic features of each group may be judged from its name which is made up of the names of the chief studies of the group. The groups at present recommended are given on pages 21 to 23.

About one-third of every student's curriculum is prescribed. Each student is required to lay sufficiently broad foundations, during the first two years, in English, in two other languages to be chosen by himself, in mathematics and one science, or in two sciences to be chosen by himself, and in history, economics, English, or philosophy. The remaining two-thirds of each student's work is elective; but in order to insure substantial results in the studies thus freely chosen, the student is required to continue two of his first-year studies (any two) through the second year, one of his second-year studies (any one) through the third year, and one of his third-year studies (any one) through the fourth year. In order to guard against the danger of too narrow or too wide a range of work, a maximum and a minimum number of departments is fixed in which the student is allowed to work during any one year. In the first and second years the number of departments thus fixed is four or five; in the third and fourth years the number is three or four.

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\* Arts or Classical, Latin Philosophy, Modern Language Philosophy, English Philosophy, General Science, Commerce and Administration, Education, Preparatory to Law, Preparatory to Medicine, Preparatory to Journalism.

All members of the Faculty, but the Dean and the members of the Executive Committee especially, are always glad to advise with the students respecting choice of studies.

#### SUMMARY OF REQUIREMENTS.

On satisfactory completion of 180 term hours under the restrictions prescribed below, the student will be recommended for the Degree of Bachelor of Arts.

The 180 term hours must include the following, amounting to 57 term hours:

- (a) English 1. (2-2-2) 6 term hours.
- (b) Two of the following languages: (8-8-8) 24 term hours.
  - Greek 1 or 7, 8, 9; Latin 1, 2, 3;
  - French 1 or 2; German 1 or 4; Spanish 1 or 2.
- (c) Mathematics 31, 32, 33 and 24. (6-6-6) 18 term hours; or Two of the following: (6-6-6) 18 term hours.
  - Mathematics 21, 22, 23; Physics 11 or 2;
  - Chemistry 1; Botany 21, 22, 23; Zoology 1;
  - Geology 17; Physiology 1.
- (d) One of the following: (3-3-3) 9 term hours.
  - European History 1 or 14; American History 1;
  - Political Science 1; Economics 30, 31, and 32;
  - Philosophy 18, and 19 or 20; English 7 or 8.

For the remaining 123 term hours required for graduation the student may elect from any courses announced in this College (see page 23, and following) for which he is qualified.

#### FIRST YEAR

- (a) Fifteen or sixteen hours each term, chosen from the prescribed work indicated above, including English 1.
- (b) Cadet service (men); Hygiene and Physical Training (women); required throughout the first year.

#### SECOND YEAR

- (a) Fifteen hours each term. This must include all the prescribed work not done in the first year; the other work of the second year to be in three or four departments of which at least two shall be departments in which the student has worked during the first year.

- (b) Cadet service (men); Hygiene and Physical Training (women); required throughout the second year.

#### THIRD YEAR

Fifteen hours each term in three or four departments, at least one to be a department in which the student has worked during the second year.

#### FOURTH YEAR

Fifteen hours each term in three or four departments, at least one to be a department in which the student has worked during the third year.

#### EXTRA HOURS

A student who has postponed a study in group (b) from the first to the second year, may take sixteen hours in the second year, and by the permission of the Executive Committee a student who has shown exceptional proficiency may be allowed to undertake from one to three extra hours. No extra hours will be granted to a first-year student, or to any student with conditions outstanding.

### Rules Governing Elections

Each student enrolled in the College of Arts, Philosophy and Science must file at the Registrar's office not later than June 1st of each year a complete statement of the courses he wishes to enter the following year. Blanks for this purpose may be obtained of the Registrar.

### First Year Options

In order to meet the requirements for graduation, the first-year student must arrange his work on one of the following plans:

I. English; two languages; two sciences, or mathematics and one science, or mathematics alone; deferring until the second year the selection from group (d), above.

II. English; two languages; mathematics or science; one subject from group (d); deferring until the second year a second subject from group (c), above.

III. English; one language; two sciences, or mathematics and one science or mathematics alone; one subject from group (d); deferring until the second year the second language from group (b), above.

In order to assist the student in his choice of work for the first two years, more specific directions are given below in connection with various natural groupings of studies. *These groups are not mandatory.* The student may make other combinations than those

suggested, provided his selection of studies fulfills one of the three options given above. In the second year many other combinations are possible. The time schedule, however, is arranged primarily to fit the combinations recommended. The days and hours at which each study is taught may be found by looking up that study on page 23 (et seq.) of this Bulletin. The title of a group indicates the chief studies of that group. For the work of the first-year student, groups 1 to 6 recommend a complete curriculum. Groups 7 to 14 name only one or two first-year studies, it being understood that the remaining studies of the first year will be chosen as recommended in some one of the first six groups.

## Study Groups

1. *Greek-Latin.* First year: Greek 1 or 7, 8, 9; Latin 1, 2, 3; English 1; and either 6 hours in (c) or 3 hours in (c) and 3 hours in (d). Second year: Greek 7, 8, 9 or 10, 11, 12; Latin 4, 5, 6. This group corresponds to the former Classical or Arts Course. Before choosing the 3 hours in (d) read groups 7 to 12. Before choosing the work in (c) read groups 4 to 6.

2. *Latin-Modern Language.* First year: Latin 1, 2, 3; French 1 or 2, or German 1 or 4, or Spanish 1 or 2; English 1; and either 6 hours in (c) or 3 hours in (c) and 3 hours in (d). Second year. Latin 4, 5, 6; French or German, or Spanish, continued. This group corresponds in general to the former Latin-Philosophy Course. Before choosing the 3 hours in (d) read groups 7 to 12. Before choosing the work in (c) read groups 4 to 6.

3. *Modern Language.* Substitute two modern languages for Greek and Latin in group 1 above. *Not more than one new language should be begun in the first year.* The student who offers but one language for admission and who does not desire to continue that language in the University should follow the arrangement of language studies suggested in the next group. This group corresponds in general to the former Modern Language-Philosophy Course. Before choosing the work in (d) read groups 7 to 12. Before choosing the work in (c) read groups 4 to 6.

4. *General Science.* First year: German 1 or 4, or French 1 or 2; Chemistry 1; Mathematics 21, 22, 23; English 1; 3 hours in (d). Second year: Continue Chemistry and one other study of the first year, add a second modern language and one of the following: Physics 2; Botany 21, 22, 23; Physiology 1; Zoology 1; Geology 17; Astronomy 1. This group corresponds in general to the former Course

in Science. It also opens the way to a thorough professional course in Chemistry. Before choosing the work in (d) read groups 7 to 12.

5. *Mathematics-Physics-Astronomy.* First year: Mathematics 31, 32, 33, 24; French 1 or 2, or German 1 or 4; English 1; 3 hours in (d). Second year: Mathematics 41, 42, 43; Physics 2, Chemistry 1; English and a second modern language. Third year: Astronomy 1 and 2. Instead of Mathematics 31, 32, 33, 24 in the first year, Chemistry 1 and Mathematics 21, 22, 23, may be chosen, to be followed by Mathematics 28 in the second year. This group emphasizes the sciences named in the title. Before choosing the work in (d) read groups 7 to 12.

6. *Biological Sciences.* First year: French 1 or 2, or German 1 or 4; Chemistry 1; Botany 21, 22, 23, or Zoology 1; English 1; 3 hours in (d). Second year: Botany; Zoology; Physiology 1, or Physics 11, or Geology 17; and a second modern language. This group corresponds to the former Course Preparatory to Medicine. Before choosing the work in (d) read groups 7 to 12.

7. *Economics-History.* First year: Include European History 1, or Economics 1 or 2, 3, 4. Second year: Include American History 1, and the subject named above not taken in the first year, continuing the other. This group corresponds to the former English Philosophy Course and Course Preparatory to Law and Journalism.

8. *History-Political Science-Administration.* First year: Include American History 1, or European History 1 or 14. Second year: Include Political Science 1, or Economics 1 and the subject named above not taken in the first year. European History 4 should be taken later. The student who has not a reading command of French or German should begin French or German not later than the second year, continuing the study during two years. This group corresponds to the former Course in Administration. It opens the way to a thorough preparation for law or the public service.

9. *Commerce-Law.* First year: Include German 1 or 4, and Economics 1. Second year: Include Economics, and American History 1 or Elementary Law. This group corresponds to the former Course in Commerce and opens the way to a thorough preparation for a business career.

10. *Sociology-Philosophy.* First year: Include Economics 2, 3, 4. Second year: Include Sociology, Philosophy 15, 16, 17 and one of the following: American History 1, European History 1, Economics 1 or 5, 6, 7. This group emphasizes the studies regarded as essential in preparation for certain important forms of municipal and social service.

11. *Philosophy-Education.* First year: Include Philosophy 18, 19.
19. Second year: Include Philosophy 20, 21 and Education 1, 2, or 3. This group corresponds to the former Course in Education, opening the way to a thorough study either of philosophy, or of educational problems.

12. *General Literature.* Continue both languages offered for admission, begin a third language in the second year and a fourth in the third year. Include English 7 or 8 and European History 14 in the work of the first two years, and take Philosophy 15, 16, 17, or 18, 19, in second or third year.

13. *General Philology.* Greek if not offered for admission should be begun in the first year, and Latin continued. Second year: Include English 28, and German 1 or 4. Note prerequisites for courses 14, 15, in French; 14 to 21 in Germanic Languages; 19, 20, 21 in Greek; 12 to 25 in Latin; 30 to 35 in English.

## Graduate Courses of Study

A special bulletin devoted to the work of the Graduate School may be obtained on application to the Executive Office.

## Announcements of Departments

### American History and Political Science

(Office, Room 15, University Hall.)

PROFESSOR KNIGHT, ASSISTANT PROFESSOR TUTTLE, ASSISTANT PROFESSOR SPENCER.

#### I. AMERICAN HISTORY.

1. Political History of the United States. Three credit hours. *Three terms. Sec. I: M., W., F., at 8; Sec. II: M., W., F., at 9; Sec. III: M., W., F., at 1.* This must precede all other courses in American History. Assistant Professor TUTTLE, Assistant Professor SPENCER.
2. The American Colonies, 1600-1763. Three credit hours. *Three terms. M., W., F., at 2.* Should be preceded or accompanied by European History 14. Assistant Professor SPENCER.
- \*4. The Slavery Struggle and Its Results, 1800-1885. Three credit hours. *Three terms. M., W., F., at 11.* Given biennially, alternating with course 6. Professor KNIGHT.

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\* Not given in 1905-1906.

6. American Diplomacy, Foreign Relations, and Expansion. Three credit hours. *Three terms. M., W., F., at 11.* Given biennially, alternating with course 4. Professor KNIGHT.
- \*7. Political Parties in the United States, 1789-1900. Two credit hours. *Three terms. Tu., Th., at 9.* Given biennially, alternating with course 12. Assistant Professor SPENCER.
8. Historical Material and Its Use. One credit hour. *First and second terms. W., at 3.* Assistant Professor TUTTLE.
9. Topical Research in American History. One credit hour. *Third term. W., at 3.* Prerequisite, course 8. Assistant Professor TUTTLE.
10. Seminary for Research Work in American History and Political Science. Two credit hours. *Three terms. M., 3 to 5.* Prerequisite, two courses in American History in addition to courses 8 and 9, and at least one course in Political Science. Professor KNIGHT.
11. The Teaching of American History. One credit hour. *Three terms. W., at 3.* Professor KNIGHT.
12. The Revolutionary and Critical Period, 1763-1789. Two credit hours. *Three terms. Tu., Th., at 9.* Given biennially, alternating with course 7. Assistant Professor SPENCER.
13. Graduate Courses. Courses of investigation arranged at the beginning of each year to meet the needs of individual graduate students. Professor KNIGHT.
14. Graduate Seminary in American History and Institutions *Three terms. Hours to be arranged.* Open only to graduate students. Professor KNIGHT.

## II. POLITICAL SCIENCE.

1. Modern Political Institutions. Three credit hours. *Three terms. M., W., F., at 9.* Prerequisite, American History 1, or European History 1, 2, and 3, or 14, or a substitute acceptable to the department. After 1905-1906 this course must precede all other courses in Political Science except 4 and 5. Assistant Professor SPENCER.
4. International Law. Two credit hours. *First and second terms. Tu., Th., at 10.* Prerequisite, one course in European History and one course in American History. Professor KNIGHT.
5. History of Treaties and Modern Diplomacy. Two credit hours. *Third term. Tu., Th., at 10.* Prerequisite, course 4. Professor KNIGHT.

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\* Not given in 1905-1906.

- \*6. The Government of Colonies and Dependencies. Two credit hours. *Three terms.* *Tu., Th., at 11.* Given biennially, alternating with course 8. Professor KNIGHT.
- 8. Municipal Government and Problems. Two credit hours. *Three terms.* *Tu., Th., at 11.* Given biennially, alternating with course 6. Professor KNIGHT.
- 9. Origin and Development of the United States Constitution. Two credit hours. *Three terms.* *Tu., Th., at 2.* Assistant Professor TUTTLE.
- 10. Theories of Government, Sovereignty, and Political Liberty. Two credit hours. *Three terms.* *M., F., at 10.* Given biennially, alternating with course 12. Assistant Professor SPENCER.
- \*12. Comparative Politics. Two credit hours. *Three terms.* *M., F., at 10.* Given biennially, alternating with course 10. Assistant Professor SPENCER.
- \*13. American Administration. Two credit hours. *Three terms.* *Tu., Th., at 3.* Given biennially, alternating with course 14. Assistant Professor TUTTLE.
- 14. Administrative Law. Two credit hours. *Three terms.* *Tu., Th., at 3.* Given biennially, alternating with course 13. Assistant Professor TUTTLE.

## Anatomy and Physiology

(Office, Room 12, Biological Hall.)

PROFESSOR BLEILE, DR. DRESBACH, DR. SEYMOUR AND MR. BEER.

- 1. Human Anatomy and Physiology. Three credit hours. *Three terms.* *Sec. I, M., W., F., at 8.* Dr. DRESBACH. *Sec. II, M., Th., F., at 10.* Must be preceded or accompanied by a course in chemistry. Professor BLEILE.
- 3. Chemical Physiology. Three credit hours. *Third term: Th., F., 1 to 4.* Professor BLEILE.
- 4. Histology and Histo-Chemistry. Five credit hours. *Three terms: M., Tu., W., 1 to 4.* Professor BLEILE, DR. DRESBACH, DR. SEYMOUR,
- 5. Microscopy and Urinary Analysis. Two credit hours. *Third term.* Professor BLEILE and DR. DRESBACH.
- 9. Physiological Laboratory. Three credit hours. *Three terms.* Professor BLEILE.

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\* Not given in 1905-1906.

11. Physiological Laboratory. Five credit hours. *Three terms.*  
Professor BLEILE.

## Ancient Art

(See Greek Language and Literature.)

## Astronomy

(Office, The Emerson McMillin Observatory.)

PROFESSOR H. C. LORD, MR. J. WARREN SMITH, MR. MAAG.

1. General Astronomy. Two credit hours. *Three terms: Tu., Th., at 1.* Professor LORD.
2. Astronomy, Geodesy and Least Squares. Three credit hours. *Three terms: M., W., F., at 11.* Professor LORD and MR. MAAG.
3. Meteorology. Two credit hours. *Third term: Tu., F., at 4.* MR. SMITH.
4. Advanced Astronomy. Three to five credit hours. *Three terms.* Prerequisite, calculus. Professor LORD.

## Bacteriology

(Office, Veterinary Laboratory Building.)

PROFESSOR MORREY.

5. Bacteriology. Four credit hours. *Three terms.* Hours to be arranged. Professor MORREY.
6. Advanced Bacteriology. Five credit hours. *Three terms.* Hours to be arranged. Professor MORREY.

## Botany

(Office, Botanical Hall.)

PROFESSOR KELLERMAN, ASSOCIATE PROFESSOR SCHAFFNER.

UNDERGRADUATE COURSES.

3. Systematic and Physiological Botany. Four credit hours. *First term: M., Tu., F., at 10.* *Laboratory; Th., 10 to 12.* Professor KELLERMAN, Associate Professor SCHAFFNER.
4. Medical Botany. Two credit hours. *Second term: M., Tu., 10 to 12.* Associate Professor SCHAFFNER.

9. Dendrology. Two credit hours. *First term: M., W., 10 to 12.* Professor KELLERMAN.
10. Dendrology. Two credit hours. *Second term. Laboratory open daily, 8 to 12.* Professor KELLERMAN.
11. Advanced Laboratory Work. *Three terms. Credit two to five hours.* *Laboratory open daily 8 to 12.* Professor KELLERMAN and Associate Professor SCHAFFNER.
12. Laboratory Work on Medicinal Plants, etc. Two to five credit hours. *Laboratory open daily 8 to 12.* Professor KELLERMAN and Associate Professor SCHAFFNER.
13. Forest Botany. Four credit hours. *Lectures, Tu., Th., at 9.* *Laboratory, Tu., Th., 2 to 4.* Prerequisite, courses 6, 7 and 8, or 21, 22 and 23.
14. Normal and Pathological Histology of Wood. Four credit hours. *Seminary, Tu., Th., at 9.* *Laboratory, Tu., W., 2 to 4.*
15. Forest Ecology and Pathology. Four credit hours. *Lectures and Seminary, Tu., Th., at 9.* *Laboratory, F., 9 to 11, and Th., 2 to 4.*
16. Ecology. Three credit hours. *First term: Tu., Th., at 9.* *Laboratory, Th., 2 to 4.* Associate Professor SCHAFFNER.
17. Morphology and Physiology. Continuation of course 21. Three credit hours. *Second term.*
18. Systematic Botany. Continuation of course 22. Three credit hours. *Third term.*
19. Laboratory and Field Work. Two or three credit hours. *Three terms: Daily, 8 to 12.* Professor KELLERMAN and Associate Professor SCHAFFNER.
20. Laboratory Work in Histology and Physiology. Three to five credit hours. *Three terms. Laboratory open daily.* Prerequisite, courses 6, 7, 8, or 21, 22, 23. Associate Professor SCHAFFNER.
21. Advanced Laboratory Work in Histology and Mirotechnique. Five credit hours. *Three terms. Laboratory open daily.* Prerequisite, courses 6, 7, 8 or 21, 22, 23. Associate Professor SCHAFFNER.
22. Laboratory and Field Work in Systematic Botany. Three to five credit hours. *Three terms. Laboratory open daily.* Prerequisite, courses 6, 7, 8, or 21, 22, 23. Professor KELLERMAN.
23. Minor Investigations. One to three credit hours. *Three terms. Daily.* Prerequisite, course 7. Professor KELLERMAN and Associate Professor SCHAFFNER.

33. Current Literature. One to three credit hours. *Three terms. Daily.* Prerequisite, course 7. Professor KELLERMAN.

GRADUATE WORK.

28. Research Work in Systematic Botany. Five credit hours. *Three terms. Laboratory open daily.* Prerequisite, courses 6, 7, 8, or 21, 22, 23. Professor KELLERMAN.

29. Research Work in Morphology and Physiology. Five or ten credit hours. *Three terms. Laboratory open daily.* Prerequisite, course 26. Associate Professor SCHAFFNER.

30. Monographic Work. Five or ten credit hours. *Three terms. Daily.* Prerequisite, course 27. Professor KELLERMAN.

31. Research in Ecology. Five or ten credit hours. *Three terms. Daily.* Prerequisite, courses 6, 7, 8, or 21, 22, 23. Associate Professor SCHAFFNER.

## Chemistry

(Temporary Office, Townshend Hall.)

PROFESSOR MCPHERSON, EMERITUS PROFESSOR NORTON, ASSOCIATE PROFESSOR HENDERSON, ASSOCIATE PROFESSOR FOULK, MISS ANDREWS, MR. HIRSCH, MR. STUART, MR. WATKINS.

1. (a) Elementary Chemistry. Three credit hours. *Three terms: Tu., Th., at 1, with Laboratory M., 1 to 4, or S., 9 to 12; or W., 11 to 12, with Laboratory Tu., 1 to 4.* Associate Professor HENDERSON, Miss ANDREWS and Department Fellows.

1. (b) Elementary Chemistry. For students who have chemistry as an entrance credit. Three credit hours. *Three terms.* Schedule same as course 1 (a). Associate Professor HENDERSON, Miss ANDREWS and Department Fellows.

17. Inorganic Preparations. Laboratory and recitations. Three to five credit hours. *Third term. Afternoons.* Associate Professor HENDERSON.

21. Advanced General Chemistry. Lectures and recitations. Two credit hours. *Three terms: Tu., Th., at 9.* Associate Professor HENDERSON.

37. Qualitative Analysis. Three to five credit hours. *First term. Afternoons.* Prerequisite, course 1. Course 21 should accompany. Associate Professor FOULK.

38. Quantitative Analysis. Three to five credit hours. *Second and third terms. Afternoons.* Prerequisite, course 37. Course 40 should accompany. Associate Professor FOULK.
39. Quantitative Analysis. Three to five credit hours. *First and second terms. Afternoons.* Prerequisite, course 38. Students electing this course will take course 17 the third term. Associate Professor FOULK.
40. Stoichiometry. One credit hour. *Second and third terms: Th., at 11. Laboratory open afternoons.* Associate Professor FOULK.
8. Organic Chemistry. Five credit hours. *First term: Tu., Th., at 10. Laboratory open afternoons.* Professor MCPHERSON.
9. Organic Chemistry. Five credit hours. *Tu., Th., at 10. Laboratory open afternoons.* Prerequisite, course 8. Professor MCPHERSON.
35. Rare Elements. Three credit hours. *First term: M., W., F., at 8.* Prerequisite, courses 21 and 38. Associate Professor HENDERSON.
30. Physical Chemistry. Three credit hours. *Second and third terms: M., W., F., at 8.* Prerequisite, Quantitative Analysis. Associate Professor HENDERSON.
41. Physical Chemistry. *Laboratory.* Three to five credit hours. *Two or three terms. Afternoons.* Prerequisite, course 30; but students taking course 30 may take up the laboratory work at the beginning of the second term and carry it along with course 30. Associate Professor HENDERSON.
32. Industrial Chemistry. Four credit hours. *First and second terms. Lecture, first term, Tu., F., at 10; second term, Tu., Th., at 10. Laboratory, W., Th., 1 to 3.* Prerequisite, the equivalent of courses 37 and 38. Professor NORTON.
15. Sanitary Analysis. Four credit hours. *Third term: Tu., Th., at 10; Laboratory, afternoons.* Prerequisite, course 38, or its equivalent. Associate Professor FOULK.
25. Historical Chemistry. Three credit hours. *Second term.* Prerequisite, course 21. Time to be arranged. Professor NORTON.
26. Chemical Seminary. One credit hour. *Three terms. Tu., at 8.* For advanced students.
- 27 (a). Advanced Chemistry. Organic. Three to five credit hours. *Three terms.* Time to be arranged. Prerequisite, courses 8 and 9. Professor MCPHERSON.

27 (b). Advanced Chemistry. Inorganic. Three to five credit hours. Time to be arranged. Associate Professor HENDERSON.

27 (c). Advanced Chemistry. Analytical. Three to five credit hours. Time to be arranged. Associate Professor FOULK.

28. Organic Chemistry. Lectures. Two credit hours. *Third term.* Prerequisite, courses 8 and 9, and preferably 27(a). Time to be arranged. Professor MCPHERSON.

29. Research Work. Five to ten credit hours. *Three terms.* Time to be arranged. Professor MCPHERSON, Associate Professor HENDERSON, Associate Professor FOULK.

36. The Teaching of Chemistry. Three credit hours. *Third term:* *Tu., Th., at 9.* Prerequisite, the permission of the instructor in charge. Professor MCPHERSON.

## Civil Engineering

(Office, Room 32, Brown Hall.)

PROFESSOR SHERMAN, MR. CHAMBERLIN.

(Of the twentyone courses offered in the Department of Civil Engineering, the following course is open to students of the College of Arts, Philosophy and Science.)

21. Surveying. Three credit hours. *Third term.* *M., W., F., at 9.* Prerequisite, Mathematics 21, 22, 23 or equivalent. Professor SHERMAN, MR. CHAMBERLIN.

## Domestic Economy

(Office, Rooms 1, 3 and 10, Hayes Hall.)

Students may elect courses in either Domestic Art or Domestic Science, but not in both.

DOMESTIC ART.

ASSOCIATE PROFESSOR SECREST.

1. Handcraft. Two credit hours. *First term:* *W., at 11 and Th., 1 to 4.* Prerequisite, Drawing 29 or equivalent. Associate Professor SECREST.
2. Textiles. Two credit hours. *Second term.* Days and hours as in Course 1. Prerequisite, Course 1. Associate Professor SECREST.
3. Textiles. Two credit hours. *Third term.* Days and hours as in Course 1. Prerequisite, Course 2. Associate Professor SECREST.

DOMESTIC SCIENCE.

PROFESSOR STONER.

1. Food Economics. Five credit hours. *First term: Tu., Th., at 9 and Tu., W., 1 to 4.* Prerequisite, Chemistry 1 or its equivalent, and Botany. Professor STONER.
2. Food Economics. Five credit hours. *Second term.* Days and hours as in Course 1. Prerequisite, Course 1. Professor STONER.
3. Advanced Food Economics. Five credit hours. *Third term.* Days and hours as in Course 1. Prerequisite, Course 2. Professor STONER.
10. Household Economics. Two credit hours. *Third term: Tu., Th., at 10.* Professor STONER.

## Drawing

(Office, Brown Hall.)

PROFESSOR BRADFORD, ASSOCIATE PROFESSOR FRENCH, ASSISTANT PROFESSOR LEWIS, MR. MARTIN, MR. TIDBALL.

(Of the nineteen courses offered in the Department of Architecture and Drawing, the following are open to students in the College of Arts, Philosophy and Science.)

7. Photography. Two credit hours. *First term: M., Tu., 1 to 3.* Prerequisite, Chemistry 1. Professor BRADFORD.
10. Mechanical Drawing. Three credit hours. *First Term: Th., and F., 1 to 4.* Associate Professor FRENCH.
14. Pen Drawing. Two credit hours. *First term: M., and Tu., 2 to 4.* Prerequisite, course 26. Assistant Professor LEWIS.
17. Water or Oil Color Painting. Two credit hours. *First term.* MR. MARTIN.
18. Water or Oil Color Painting. Two credit hours. *Second term.* MR. MARTIN.
19. Water or Oil Color Painting. Two credit hours. *Third term.* MR. MARTIN.  
17, 18 and 19 constitute a continuous year's work. Prerequisite, course 24, 25 and 26.
24. Freehand Drawing. One or two credit hours. *First term.* Assistant Professor LEWIS, MR. MARTIN, MR. TIDBALL.
25. Freehand Drawing. One or two credit hours. *Second term.* Assistant Professor LEWIS, MR. MARTIN, MR. TIDBALL.

26. Freehand Drawing. One or two credit hours. *Third term.*  
Assistant Professor LEWIS, MR. MARTIN, MR. TIDBALL.  
24, 25 and 26 constitute a continuous year's work.

## Economics and Sociology

(Office, Room 18, University Hall.)

PROFESSOR HAGERTY, ASSOCIATE PROFESSOR HAMMOND, ASSISTANT PROFESSOR —

Students who plan to do considerable work in Economics and Sociology should take courses 30, 31 and 32 as introductory to all other courses and should take at the same time Geology 17. Those intending to do but one year's work in the department should take course 33.

### I. ECONOMICS.

30. Industrial and Social History of England. (Formerly course 2). Three credit hours. *First term.* Open only to first and second year students. *Sec. I., M., W., F., at 8; Sec. II., M., W., F., at 9.* Assistant Professor —.

31. Industrial and Social History of the United States. (Formerly course 3). Three credit hours. *Second term.* Open only to first and second year students. *Sec. I., M., W., F., at 8; Sec. II., M., W., F., at 9.* Assistant Professor —.

32. Commercial and Economic Geography. Three credit hours. *Third term.* Open only to first and second year students. *Sec. I., M., W., F., at 8; Sec. II., M., W., F., at 9.* Assistant Professor —.

33. Elements of Political Economy. (Formerly course 1). Three credit hours. *Three terms.* This course should precede all courses except 30, 31 and 32 and Sociology 1, 2, 3 and 4, 5, 6. Not open to first year students. Law students will find this course well adapted to their work. *Sec. I., M., W., F., at 8; Sec. II., M., W., F., at 9; Sec. III., M., W., F., at 2.*

\*34. Practical Problems; Immigration, Money, Land. (Formerly course 5). Two credit hours. *First term.* *Tu., Th., at 9.* Prerequisite, course 33. Professor HAGERTY.

\*35. Practical Problems: Railroads, Tariff, Crises. (Formerly course 6). Two credit hours. *Second term.* *Tu., Th., at 9.* Prerequisite, course 34. Professor HAGERTY.

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\* Not given in 1905-1906.

\*36. Practical Problems: Labor and Capital. (Formerly course 7). Two credit hours. *Third term.* *Tu., Th., at 9.* Prerequisite, course 35. Professor HAGERTY.

37. Industrial Organization and Management. Three credit hours. *First term.* *M., W., F., at 9.* Prerequisite, course 33. Associate Professor HAMMOND.

38. Industrial Concentration and Monopoly. Three credit hours. *Second term.* *M., W., F., at 9.* Prerequisite, course 37. Associate Professor HAMMOND.

39. Labor Organizations and Employers' Associations. Three credit hours. *Third term.* *M., W., F., at 9.* Prerequisite, course 38. Associate Professor HAMMOND.

40. Distributive and Regulative Industries. Three credit hours. *First and Second terms.* *M., W., F., at 11.* Prerequisite, course 33. Professor HAGERTY.

41. Commercial Credit. Three credit hours. *Third term.* *M., W., F., at 11.* Prerequisite, course 40. Professor HAGERTY.

42. Public Finance and Taxation. (Formerly course 13). Two credit hours. *First and second terms.* *Tu., Th., at 2.* Prerequisite, course 33. Associate Professor HAMMOND.

43. Financial History of the United States. Two credit hours. *Third term.* *Tu., Th., at 2.* Prerequisite, course 42. Associate Professor HAMMOND.

44. Transportation. Two credit hours. *Three terms.* *Tu., Th., at 8.* Prerequisite, course 33. Associate Professor HAMMOND.

45. Seminary in Economics. (Formerly course 17). Two credit hours. *Three terms.* *Tu., at 3-5.* Open to graduates and advanced undergraduates. Recommended to students who have had two or three years' work in economics. Professor HAGERTY, Associate Professor HAMMOND.

## II. SOCIOLOGY.

Courses 1, 2 and 3 are not open to first year students. It is recommended that courses 1, 2 and 3 be preceded by 30, 31, 32 or 33, or Philosophy 18 or Zoology 1. Courses 4, 5 and 6 should be preceded by 1, 2, 3.

1. Elements of Sociology. (Formerly course 11). Three credit hours. *First term.* *M., W. F., at 1.* Assistant Professor

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\* Not given in 1905-1906.

2. History of the Family. Three credit hours. *Second term.* *M., W., F., at 1.* Prerequisite, course 1. Assistant Professor —.
3. Primitive Society. (Formerly course 12). Three credit hours. *Third term.* *M., W., F., at 1.* Prerequisite, course 2. Assistant Professor —.
4. Dependents and Defectives. Three credit hours. *First term.* *Tu., Th., F., at 10.* Professor HAGERTY.
5. Criminology. Three credit hours. *Second term.* *Tu., Th., F., at 10.* Prerequisite, course 4. Professor HAGERTY.
6. Organized Philanthropy. Three credit hours. *Third term.* *Tu., Th., F., at 10.* Prerequisite, course 5. Professor HAGERTY.
7. Seminary in Sociology. Two credit hours. *Three terms.* Prerequisite, courses 1, 2 and 3. Hours to be arranged.

#### GRADUATE COURSES.

46. Research Work. (Formerly course 18). Two credit hours. *Three terms.* Hours to be arranged.
47. Advanced Economics. (Formerly course 22). One to ten credit hours. *Three terms.* Open to undergraduates only on permission of the head of the department. The aim of these courses is to offer the opportunity to specialize. Elections will naturally fall under the following heads: (a) Theoretical problems. (b) Historical problems. (c) Practical problems. (d) Finance. (e) Commerce. (f) Sociology (Theoretical or Practical). (g) Statistics. (h) Teachers' Course and Training for Fellowship. If enough students elect the same line of work, a Seminary will be organized for such work.

## Education

(Office, Room 57, University Hall.)

PROFESSOR MAJOR, ASSISTANT PROFESSOR HAINES.

1. Educational Psychology. Three credit hours. *Three terms.* *M., W., F., at 11.* Prerequisite, one year of college work. Professor MAJOR.
2. Introduction to Educational Theory. Two credit hours. *Three terms.* *Tu., Th., at 10.* Professor MAJOR.
3. History of Education. Three credit hours. *Three terms.* *M., W., F., at 2.* Assistant Professor HAINES.
4. Child Study. Two credit hours. *Three terms.* *M., F., at 10.* Professor MAJOR.

5. Science of Education. Three credit hours. *Three terms. M., W., F., at 11.* Prerequisite, Philosophy 18, 19, and Education 1, 2 or 3. Assistant Professor HAINES.
6. Modern Educational Systems. Two credit hours. *Three terms. Tu., Th., at 2.* Professor MAJOR.
7. Secondary Education. Two credit hours. *Three terms. Tu., Th., at 11.* Prerequisite, two years of college work. Professor MAJOR.
8. Educational Classics. Two credit hours. *Three terms. M. W., at 2.* Professor MAJOR.
9. Seminar. Two credit hours. *Three terms. F., 2 to 4.* Prerequisite, three years of college work with Philosophy or Education largely elected. Professor MAJOR.

## Electrical Engineering

(Office, Room 8, Electrical Building.)

PROFESSOR CALDWELL, ASSISTANT PROFESSOR COGGESHALL.

6. Electrical Engineering. Two credit hours. *First and second terms. M., Th., at 10.* Prerequisite, Mathematics 20 and Physics 2. Professor CALDWELL.
7. Electrical Engineering; Laboratory. Two credit hours. *First and second terms. M., W., 1 to 5; S., 8 to 12.* Course 6 must accompany this course. Professor CALDWELL, Assistant Professor COGGESHALL.
8. Direct Current Dynamo Machinery. Four credit hours. *Second term. M., T., Th., F., at 9.* Prerequisite, Physics 3 and 4, and 6 or its equivalent. Professor CALDWELL.
9. Elementary Dynamo Laboratory. Four credit hours. *Third term. W., Th., F., 1 to 5; S., 8 to 12.* Election subject to available accommodations. Prerequisite, course 8. Professor CALDWELL, Assistant Professor COGGESHALL.
15. Alternating Current Circuits and Machinery. Two credit hours. *Third term.. M., Th., at 10.* Prerequisite, course 9. Professor CALDWELL.
16. Continuation of 15. Three credit hours. *First term. M., W., F., at 11.* Prerequisite, course 15.
17. Continuation of 16. Two credit hours. *Second term. M., W., at 8.* Prerequisite, course 16.
11. Advanced Dynamo Laboratory. Three credit hours. *Three terms. Tu., or Th., 10 to 5.* Must be accompanied by courses 16 and 17. Professor CALDWELL, Assistant Professor COGGESHALL.

# English

(Office, Rooms 44 and 31, University Hall.)

PROFESSOR DENNEY, PROFESSOR BARROWS, ASSOCIATE PROFESSOR TAYLOR,  
ASSISTANT PROFESSOR GRAVES, ASSISTANT PROFESSOR MCKNIGHT,  
ASSISTANT PROFESSOR MISS WEAVER.

## UNDERGRADUATE COURSES.

1. Paragraph Writing and Analysis of Prose (Formerly Rhetoric 1). Two credit hours. *Three terms. Tu., Th., or W., F., at 8, Tu., Th., at 9, Tu., Th., at 10, Tu., Th., at 1.* Associate Professor TAYLOR, Assistant Professor GRAVES, Assistant Professor MCKNIGHT.
2. Expository Writing (Formerly Rhetoric 2). Two credit hours. *First term. Tu., Th., at 9, 10, 11, M., F., at 10.* Prerequisite, course 1. Professor DENNEY, Assistant Professor GRAVES, Assistant Professor —.
3. Brief Making and Argumentation (Formerly Rhetoric 3). Two credit hours. *Second and third terms.* Time same as course 2. Prerequisite, course 1. Professor DENNEY, Assistant Professor GRAVES, Assistant Professor —.
5. Advanced Composition (Formerly Rhetoric 10.) Two credit hours. *Second and third terms. Tu., Th., at 11.* Prerequisite, courses 1 and 2. Assistant Professor GRAVES.
7. Introduction to English Literature (Formerly English Literature 1.) Three credit hours. *Three terms. M., W., F., at 8, M., W., F., at 9.* No prerequisite course. Professor BARROWS.
8. General Survey of English Literature. Three credit hours. *Three terms. M., W., F., at 3. M., W., F., at 11.* No prerequisite course. Assistant Professor GRAVES, Assistant Professor —.
10. From Spenser to Milton (Formerly English Literature 2.) Two credit hours. *First term. Tu., Th., at 11.* Prerequisite, course 7 or 8. Associate Professor TAYLOR.
11. From Dryden to Pope (Formerly English Literature 3.) Two credit hours. *Second term. Tu., Th., at 11.* Prerequisite, course 7 or 8. Associate Professor TAYLOR.
12. The Age of Johnson (Formerly English Literature 4.) Two credit hours. *Third term. Tu., Th., at 11.* Prerequisite, course 7 or 8. Associate Professor TAYLOR.
14. Burke to DeQuincey. Four credit hours. *First term. M., Tu., Th., F., at 10.* Prerequisite, course 7 or 8. Professor DENNEY.

15. Carlyle and Ruskin. Four credit hours. *Second term. M., Tu., Th., F., at 10.* Prerequisite, course 7 or 8. Professor DENNEY.
16. Arnold and Newman. Four credit hours. *Third term. M., Tu., Th., F., at 10.* Prerequisite, course 7 or 8. Professor DENNEY.
18. Shelley and Wordsworth. Three credit hours. *First term. M., W., F., at 9.* Prerequisite, course 7 or 8. Associate Professor TAYLOR.
19. Tennyson. Three credit hours. *Second term. M., W., F., at 9.* Prerequisite, course 7 or 8. Associate Professor TAYLOR.
20. Browning. Three credit hours. *Third term. M., W., F., at 9.* Prerequisite, course 7 or 8. Associate Professor TAYLOR.
22. The English Bible. The Pentateuch and Earlier Histories. (Formerly English Literature 7.) One credit hour. *Three terms.* Not offered until 1907-8. No prerequisite course. Professor BARROWS.
23. The English Bible: Later Histories, Poetry and Prophecies (Formerly English Literature 8.) One credit hour. *Three terms. Th., at 8.* No prerequisite course. Professor BARROWS.
24. The English Bible: The New Testament (Formerly English Literature 9.) One credit hour. *Three terms.* Not offered until 1906-7. No prerequisite course. Professor BARROWS.
26. History of the English Language (Formerly Rhetoric 15.) Two credit hours. *First and second terms. M., F., at 10.* No prerequisite course. Assistant Professor McKNIGHT.
27. English Words. Two credit hours. *Third term. M., F., at 10.* No prerequisite course. Assistant Professor McKNIGHT.
28. Old English (Formerly Rhetoric 16.) Two credit hours. *Three terms. M., W., at 9.* No prerequisite course. Assistant Professor McKNIGHT.
30. Pre-Chaucerian Literature (Formerly Rhetoric 18.) Three credit hours. *First term, M., W., F., at 11.* Assistant Professor McKNIGHT.
31. Chaucer (Formerly English Literature 13.) Three credit hours. *Second term. M., W., F., at 11.* Assistant Professor McKNIGHT.
32. Arthurian Story (Formerly Rhetoric 17.) Three credit hours. *Third term. M., W., F., at 11.* Assistant Professor McKNIGHT.

35. Shakespeare (Formerly English Literature 10.) Three credit hours. *Three terms. M., W., F., at 3.* Prerequisite, course 7 or 8. Professor BARROWS.

36. The Drama Other Than Shakespeare (Formerly English Literature 15.) Three credit hours. *First and second terms. M., W., F., at 2.* Prerequisite, course 7 or 8. Professor BARROWS.

37. Milton: Epic and Prose (Formerly English Literature 14.) Three credit hours. *Third term. M., W., F., at 2.* Prerequisite, course 7 or 8. Professor BARROWS.

38. The History of Prose Fiction. Four credit hours. *First term. M., Tu., Th., F., at 10.* Prerequisite, course 7 or 8. Associate Professor TAYLOR.

39. The Short Story (Formerly Rhetoric 4). Four credit hours. *First term.* Prerequisite, courses 2 and 7 or 8. Not offered until 1906-7.

40. The Novel (Formerly English Literature 11). Four credit hours. *Second and third terms. M., Tu., Th., F., at 10.* Prerequisite, course 7 or 8. Associate Professor TAYLOR.

42. Literary Types (Formerly English Literateure 17). Three credit hours. *First and second terms.* Prerequisite, course 7 or 8. Not offered until 1906-7.

43. Poetics (Formerly Rhetoric 6). Three credit hours. *Third term.* Prerequisite, course 7 or 8. Not offered until 1906-7.

45. American Literature (Formerly English Literature 12). Three credit hours. *First term. M., W., F., at 11.* Prerequisite, course 7 or 8. Associate Professor TAYLOR.

46. Current Literature (Formerly English Literature 19). Three credit hours. *Second and third terms. M., W., F., at 11.* Prerequisite, course 7 or 8. Associate Professor TAYLOR.

48. Teachers' Course (Formerly Rhetoric 13). Two credit hours. *Three terms. Tu., Th., at 11.* Prerequisite, courses 1 and 7 or 8. Professor DENNEY.

49. Seminary (Formerly Rhetoric 12). Two credit hours. *Three terms. M., 4 to 6.* Professor DENNEY.

#### GRADUATE COURSES.

- (a) Theories of Rhetoric. Professor DENNEY.
- (b) Old and Middle English Philology. Assistant Professor McKNIGHT.
- (c) Literary Problems. Professor BARROWS.
- (d) Comparative Criticism. Associate Professor TAYLOR.

## Entomology

(See Zoology and Entomology.)

## European History

(Office, Room 36, University Hall.)

PROFESSOR SIEBERT, DR. MCNEAL.

1. The Early Middle Ages. Three credit hours. *First term.* *Sec. I, M., W., F., at 9.* Professor SIEBERT. *Sec. II, M., W., F., at 1.* Dr. MCNEAL.
2. Renaissance. Three credit hours. *Second term.* *Sec. I, M., W., F., at 9.* Professor SIEBERT. *Sec. II, M., W., F., at 1.* Dr. MCNEAL.
3. Modern Europe. Three credit hours. *Third term.* *Sec. I, M., W., F., at 9.* Professor SIEBERT. *Sec. II, M., W., F., at 1.* Dr. MCNEAL.
4. Political and Constitutional History of England. Three credit hours. *Three terms.* *M., W., F., at 11.* Prerequisite, course 14 or courses 1, 2, 3. Professor SIEBERT.
- \*5. Political and Social History of Greece to the Roman Conquest. Two credit hours. *First term.* *Tu., Th., at 9.* Dr. MCNEAL.
- \*6. Roman History and Institutions to the End of the Republic. Two credit hours. *Second and third terms.* *Tu., Th., at 9.* Dr. MCNEAL.
7. Period of the Protestant Reformation. Three credit hours. *First term.* *M., W., F., at 2.* Prerequisite, courses 1, 2 and 3, or course 14. Professor SIEBERT.
8. The French Revolution and Napoleonic Periods, 1789-1815. Three credit hours. *Second term.* *M., W., F., at 2.* Prerequisite, courses 1, 2 and 3, or course 14. Professor SIEBERT.
9. History of Europe in the Nineteenth Century. Three credit hours. *Third term.* *M., W., F., at 2.* Prerequisite, courses 1, 2 and 3, or course 14. Professor SIEBERT.
10. History of European Colonies. Three credit hours. *First and second terms.* *M., Tu., F., at 10.* Prerequisite, courses 1, 2 and 3, or course 14. Professor SIEBERT.
11. The Eastern Question. Three credit hours. *Third term.* *M., Tu., F., at 10.* Prerequisite, courses 1, 2 and 3. Professor SIEBERT.

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\* Not given until 1906-1907.

12. Constitutional History of France. Two credit hours. *Three terms.* *Tu., Th., at 9.* Prerequisite, courses 1, 2 and 3, and ability to read French. Dr. MCNEAL.
14. Narrative History of England. Three credit hours. *Three terms.* *M., W., F., at 8.* Dr. MCNEAL.
- \*15. History of Northeastern Europe. Two credit hours. *First and second terms.* *Tu., Th., at 9.* Prerequisite, courses 1, 2 and 3, or course 14. Professor SIEBERT.
- \*16. Europe and the Asiatic Question. Two credit hours. *Third term.* *Tu., Th., at 9.* Prerequisite, courses 1, 2 and 3 or course 14. Professor SIEBERT.
18. History of Medieval Civilization. Three credit hours. *Three terms.* *M., W., F., at 3.* Prerequisite, courses 1, 2 and 3. Dr. MCNEIL.
- \*19a. The Germanic Invasions. Three credit hours. *First term.* *M., W., F., at 3.* Prerequisite, courses 1, 2 and 3, or course 14. Dr. MCNEAL.
- \*19b. Charles the Great. Three credit hours. *Second term.* *M., W., F., at 3.* Prerequisite, courses 1, 2 and 3, or course 14. Dr. MCNEAL.
- \*19c. The Feudal System. Three credit hours. *Third term.* *M., W., F., at 3.* Prerequisite, courses 1, 2 and 3, or course 14. Dr. MCNEAL.
20. Historical Method and Documentary Sources of the Middle Ages. Two credit hours. *Three terms.* Prerequisite, courses 1, 2 and 3. Dr. MCNEAL.
21. Investigations of Special Topics in Modern European History. Open only by permission of instructor. Professor SIEBERT.

## French

(See Romance Languages and Literatures.)

## Geology

(Office, Orton Hall.)

PROFESSOR PROSSER, PROFESSOR BOWNOCKER.

6. Economic Geology. Three credit hours. *Second term.* *M., W., F., at 11.* Prerequisite, courses 11 and 12. Professor BOWNOCKER.

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\* Not given until 1906-1907.

11. Inorganic Geology. Three credit hours. *First term. M., W., F., at 9.* Prerequisite, Chemistry 1. Professor BOWNOCKER.
12. Historical Geology. Three credit hours. *Second term. M., W., F., at 9.* Prerequisite, course 11. Professor PROSSER.
13. Field Geology. Three credit hours. *Third term. Lecture M., at 9. Field trips, Sat. Laboratory open W., at 9.* Prerequisite, courses 11 and 12. Professor PROSSER.
14. Paleontology. Two to five credit hours. *Three terms. Laboratory open M., Tu., W., Th., F., 1 to 4.* Prerequisite, courses 11 and 12. Professor PROSSER.
15. Areal Geology. Two to five credit hours. *First and third terms. Field work Sat. Laboratory open M., Tu., W., Th., F., 1 to 4.* Prerequisite, courses 11, 12, 13 and 14. Professor PROSSER.
16. Advanced Historical Geology. Three to five credit hours. *Three terms. Field work first and third terms and part of the summer; time to be arranged. Laboratory open M., Tu., W., Th., F., 1 to 4.* Prerequisite, courses 11, 12, 13 and 14. Professor PROSSER.
17. Physiography. Three credit hours. *Three terms. M., W., F., at 1, and Tu., Th., F., at 10.* Open to first and second year students only. Professor BOWNOCKER.
18. Geographic Geology. Three credit hours. *Third term. Tu., Th., at 9.* Prerequisite, course 11 or 17. Professor BOWNOCKER.
19. Petrography. Two credit hours. *Three terms. Laboratory open M., Tu., W., Th., F., 1 to 4.* Prerequisite, Chemistry 1, Metallurgy 2, and Geology 11. Professor BOWNOCKER.
20. Research Work. Three to five credit hours. *Three terms.* Prerequisite, preceding courses in inorganic or historical geology. Professor BOWNOCKER or Professor PROSSER.

## Germanic Languages and Literatures

(Office, Rooms 30 and 32, University Hall.)

PROFESSOR RHOADES, ASSISTANT PROFESSOR VILES, MR. EISENLOHR,  
MR. BUSEY, MR. BEAL.

1. Elementary German. Four credit hours. *Three terms. Sec. I, Tu., W., Th., F., at 9. Sec. II, M., Tu., Th., F., at 10. Sec. III, M., Tu., Th., F., at 10. Sec. IV, M., Tu., Th., F., at 11. Sec. V, M., Tu., Th., F., at 11. Sec. VI, Tu., W., Th., F., at 2. Assistant Professor VILES. Sec. VII, Tu., W., Th., F., at 3. Mr. EISENLOHR.*

2. Science Reading. Four credit hours. *Third term. Sec. I, Tu., W., Th., F., at 8. Sec. II, Tu., W., Th., F., at 9.* Prerequisite, course 4 for the first and second terms. Mr. EISENLOHR.

4. Intermediate German. Four credit hours. *Three terms. Sec. I, M., Tu., Th., F., at 10.* Assistant Professor VILES. *Sec. II, M., Tu., Th., F., at 11.* Professor RHOADES. *Sec. III, Tu., W., Th., F., at 2.* Dr. \_\_\_\_\_. *Sec. IV, Tu., W., Th., F., at 8.* Mr. EISENLOHR. *Sec. V, Tu., W., Th., F., at 9.* Mr. EISENLOHR. Sections IV and V will be replaced in the third term by course 2.

\*9. Classical Drama. Three credit hours. *Three terms. Sec. I, M., W., F., at 2.* Professor RHOADES. *Sec. II, M., W., F., at 3.* Dr. \_\_\_\_\_. Prerequisite, course 4 or equivalent.

10. Modern Prose and Drama. Three credit hours. *Three terms. Sec. I, M., W., F., at 2.* Professor RHOADES. *Sec. II, M., W., F., at 3.* Dr. \_\_\_\_\_. Prerequisite, course 4 or equivalent.

11. Faust. Three credit hours. *First and second terms. M., W., F., at 3.* Prerequisite, course 9 or 10. Must be elected for both terms. Professor RHOADES.

12. Prose Composition and Conversation. Two credit hours. *Three terms. W., F., at 2.* Prerequisite, course 4. Open only by permission. The course is conducted in German. Mr. EISENLOHR.

13. Advanced Prose Composition. One credit hour. *Three terms. M., at 2.* The course is intended for students who are preparing to teach and is conducted in German. Assistant Professor VILES.

14. Gothic. Three credit hours. *First term. M., W., F., at 8.* The work is introductory to the historical study of either English or German. Assistant Professor VILES.

15. Old High German. Two credit hours. *Second and third terms. M., W., at 8.* This, with course 17, forms a natural sequence to 14. Assistant Professor VILES.

17. Old Saxon and Old Norse. One credit hour. *Second and third terms. F., at 8.* The work follows course 14 and should be taken in connection with 15. Assistant Professor VILES.

16. Middle High German. Two credit hours. *Three terms. Tu., Th., at 8.* Assistant Professor VILES.

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\* Not given until 1906-1907.

26. Seminary. Studies in Recent and Contemporary Literature. Two credit hours. *Three terms. One session Tu. or Th. afternoon.* The work is continuous throughout the year and must be so elected in order to count for an advanced degree. Professor RHOADES.

28. German Lyric Poetry. Two credit hours. *Three terms. Tu., and Th., at 2.* The course is continuous, but may be elected for a single term. Prerequisite, course 4. Mr. EISENLOHR.

30. History of German Literature Since the Reformation. Three credit hours. *Third term. M., W., F., at 3.* Graduates will present a special study of a single author or movement. Professor RHOADES.

## Greek Language and Literature

(Office, Room 28, University Hall.)

PROFESSOR SMITH, ASSOCIATE PROFESSOR HODGMAN, ASSOCIATE PROFESSOR ELDEN.

1. Elementary Greek. Four credit hours. *Three terms. M., Tu., Th., F., at 11.* Associate Professor ELDEN.

7. Xenophon: The Memorabilia of Socrates; Exercises in Greek Prose. Four credit hours. *First term. M., Tu., Th., F., at 11.* Prerequisite, course 1. Professor SMITH.

8. Herodotus: Selections; with Studies in Greek History. Four credit hours. *Second term. M., Tu., Th., F., at 11.* Prerequisite, course 7. Professor SMITH.

9. Homer's Odyssey, Selections from Books I-IX. Four credit hours. *Third term. M., Tu., Th., F., at 11.* Prerequisite, courses 7 and 8. Professor SMITH.

10. Lysias: Eight Orations; with Studies in Attic Procedure. Three credit hours. *First term. Tu., Th., F., at 10.* Prerequisite, courses 7 to 9. Professor SMITH.

11. Plato: Apology, Crito and Phædo. Three credit hours. *Second term. Tu., Th., F., at 10.* Prerequisite, courses 7 to 10. Professor SMITH.

12. Homer's Iliad. Three credit hours. *Third term. Tu., Th., F., at 10.* Prerequisite, courses 7 to 11. Professor SMITH.

13. Thucydides: Book I or Book VII. Three credit hours. *First term. M., W., F., at 3.* Prerequisite, courses 7 to 12. Associate Professor HODGMAN.

14. Demosthenes: Olynthiacs and Philippics. Three credit hours. *Second term.* *M., W., F., at 3.* Prerequisite, courses 7 to 12. Associate Professor HODGMAN.
15. Greek Lyric Poets, or Theocritus. Three credit hours. *Third term.* *M., W., F., at 3.* Prerequisite, courses 7 to 12. Associate Professor HODGMAN.
16. Euripides: Alcestis, with lectures on the Attic drama. Two credit hours. *First term.* *Tu., Th., at 3.* Prerequisite, courses 7 to 12. Associate Professor HODGMAN.
17. Sophocles: Oedipus Tyrannus. Two credit hours. *Second term.* *Tu., Th., at 3.* Prerequisite, courses 7 to 12. Associate Professor HODGMAN.
18. Aeschylus: Agamemnon. Two credit hours. *Third term.* *Tu., Th., at 3.* Prerequisite, courses 7 to 12. Associate Professor HODGMAN.
19. Epic Poetry. Two credit hours. *First term.* *W., F., at 2.* Prerequisite, courses 7 to 12. Professor SMITH.
20. Aristophanes: The Birds. Two credit hours. *Second term.* *W., F., at 2.* Prerequisite, courses 7 to 12. Professor SMITH.
21. Post-Classical Greek. Two credit hours. *Third term.* *W., F., at 2.* Prerequisite, courses 7 to 12. Professor SMITH.
22. Ancient Art. Lectures on Architecture. Two credit hours. *First term.* No prerequisite course. Professor SMITH.
23. Ancient Art. Lectures on Sculpture. Two credit hours. *Second term.* No prerequisite course. Professor SMITH.
24. Ancient Art. Lectures on Sculpture. Two credit hours. *Third term.* No prerequisite course. Professor SMITH.
25. Greek Philosophy. Two credit hours. *First term.* *Tu., Th., at 2.* Prerequisite, courses 7 to 12. Professor SMITH.
26. Plato: Gorgias or Protagoras. Two credit hours. *Second term.* *Tu., Th., at 2.* Prerequisite, courses 7 to 12. Professor SMITH.
27. Studies in New Testament Greek. Two credit hours. *Third term.* *Tu., Th., at 2.* Prerequisite, courses 7 to 12. Professor SMITH.
- \*28. Historical Grammar. One credit hour. *Three terms.* *Th., at 3.* Prerequisite, courses 7 to 12. Associate Professor HODGMAN.
29. Relations of Greece and Persia: the Panegyricus of Isocrates. Two credit hours. *First term.* Prerequisite, courses 7 to 12. Professor SMITH.

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\* Not given until 1906-1907.

30. The Macedonian Supremacy: Arrian's Expedition of Alexander the Great. Two credit hours. *Second term.* Prerequisite, courses 7 to 12. Professor SMITH.
31. Later Greek Epics: the Argonautica of Apollonius Rhodius. Two credit hours. *Third term.* Prerequisite, courses 7 to 12. Professor SMITH.

## History

(See American and European History.)

## Italian

(See Romance Languages.)

## Latin Language and Literature

(Office, Room 28, University Hall.)

PROFESSOR DERBY, ASSOCIATE PROFESSOR HODGMAN, ASSOCIATE PROFESSOR ELDEN.

1. Cicero: De Senectute and De Amicitia, or selected letters. Four credit hours. *First term.* Prerequisite, four units of preparatory Latin. *Sec. I, M., Tu., Th., F., at 10.* Associate Professor ELDEN. *Sec. II, M., Tu., Th., F., at 11.* Professor DERBY. *Sec. III, Tu., W., Th., F., at 2.* Associate Professor HODGMAN.
2. Livy: Book 1, 2, 21 or 22. Four credit hours. *Second term.* Prerequisite, course 1. *Sec. I, M., Tu., Th., F., at 10.* Associate Professor ELDEN. *Sec. II, M., Tu., Th., F., at 11.* Professor DERBY. *Sec. III, Tu., W., Th., F., at 2.* Associate Professor HODGMAN.
3. Horace: Odes. Four credit hours. *Third term.* Prerequisite, courses 1 and 2. *Sec. I, M., Tu., Th., F., at 10.* Associate Professor ELDEN. *Sec. II, M., Tu., Th., F., at 11.* Professor DERBY. *Sec. III, Tu., W., Th., F., at 2.* Associate Professor HODGMAN.
4. Pliny: Selected Letters. Three credit hours. *First term.* *Sec. I, Tu., Th., F., at 2.* Professor DERBY. *Sec. II, M., Th., F., at 11.* Associate Professor HODGMAN.
5. Tacitus: Germania and Agricola, or Catullus. Three credit hours. *Second term.* *Sec. I, Tu., Th., F., at 2.* Professor DERBY. *Sec. II, Tu., Th., F., at 11.* Associate Professor HODGMAN.

6. Terence: Phormio; Plautus, Trinummus or Captivi. Three credit hours. *Second term. Sec. I, Tu., Th., F., at 2.* Professor DERBY. *Sec. II, Tu., Th., F., at 11.* Associate Professor HODGMAN.
7. Martial: Selected Epigrams. Three credit hours. *First term. M., W., F., at 3.* Professor DERBY.
8. Suetonius. Three credit hours. *Second term. M., W., F., at 3.* Professor DERBY.
9. Tacitus: Historiæ or Annales. Three credit hours. *Third term. M., W., F., at 3.* Professor DERBY.
- \*10. Plautus: Menæchmi and Rudens. Three credit hours. *First term. Tu., Th., F., at 10.* Prerequisite, courses 1 to 3, and 4 to 6. Associate Professor HODGMAN.
- \*11. Cicero: De Finibus or De Officiis. Three credit hours. *Second term. Tu., Th., F., at 10.* Prerequisite, courses 1 to 3, and 4 to 6. Associate Professor HODGMAN.
- \*12. Seneca. Three credit hours. *Third term. Tu., Th., F., at 10.* Prerequisite, courses 1 to 3, and 4 to 6. Associate Professor HODGMAN.
13. Sallust. Three credit hours. *First term. M., W., F., at 9.* Prerequisite, courses 1 to 3, and 4 to 6. Associate Professor ELDEN.
14. Epic Poetry. Three credit hours. *Second term. M., W., F., at 9.* Prerequisite, courses 1 to 3, and 4 to 6. Associate Professor ELDEN.
15. Horace: Satires. Three credit hours. *Third term. M., W., F., at 9.* Prerequisite, courses 1 to 3, and 4 to 6. Associate Professor ELDEN.
- \*16. Horace: Epistles. Three credit hours. *First term. M., W., F., at 3.* Professor DERBY.
- \*17. Tacitus: Annals. Three credit hours. *Second term. M., W., F., at 3.* Professor DERBY.
- \*17a. Late Latin. Three credit hours. *Third term. M., W., F., at 3.* Professor DERBY.  
Courses 18 and 19 are essential for those students who are preparing to teach Latin.
18. Teachers' Course. Three credit hours. *Three terms. Tu., Th., at 9.* Prerequisite, courses 1 to 6. Associate Professor ELDEN.

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\* Not given until 1906-1907.

19. Latin Prose Composition: for Teachers. Three credit hours. *Three terms. M., W., F., at 9.* Associate Professor HODGMAN.

\*20. Antiquities. Two credit hours. *Three terms. Tu., Th., at 8.* Prerequisite, courses 1 to 3, and 4 to 6. Professor DERBY.

30. Advanced Latin. One to ten credit hours. *Three terms.* Not more than five hours selected from the following list will be given any one year: (a) Latin Literature. (b) Latin Philology. (c) Historical Latin Grammar (sounds and inflection). (d) Historical Latin Grammar (syntax). (e) Advanced Latin Composition. (f) Textual Criticism and Methods of Philological Study. (g) Roman Religion (Fasti of Ovid). (h) Juristic Latin (Institutes of Justinian). (i) Mediæval Latin. (j) Inscriptions and Palæography. Hours to be arranged. Professor DERBY, Associate Professor HODGMAN, Associate Professor ELDEN.

## Law

(Office, Page Hall.)

PROFESSOR PAGE, PROFESSOR KINKEAD.

Elementary Law. *First semester.* Eight hours a week to November 1st, five hours a week after November 1st. Credit equivalent of nine term hours. Professor PAGE.

Contracts. *First semester.* Two hours a week after November 1st. Credit equivalent of two term hours. Professor PAGE.

Torts. *First semester.* Two hours a week after November 1st. Credit equivalent of two term hours. Professor KINKEAD.

Contracts. *Second semester.* Four hours a week. Credit equivalent of six term hours. Must be preceded by Contracts in first semester. Professor PAGE.

Torts. *Second semester.* Three hours a week. Credit equivalent of four term hours. Must be preceded by Torts in first semester. Professor KINKEAD.

# Mathematics

(Office, Room 45, University Hall.)

PROFESSOR BOHANNAN, ASSOCIATE PROFESSOR MCCOARD, ASSOCIATE PROFESSOR BOYD, ASSISTANT PROFESSOR ARNOLD, ASSISTANT PROFESSOR SWARTZEL, ASSISTANT PROFESSOR KUHN, ASSISTANT PROFESSOR CODDINGTON, MR. RASOR.

21. College Algebra. Three credit hours. *First term.* *M., W., F., at 9, 11 and 1.* Professor BOHANNAN, Associate Professor MCCOARD, Assistant Professors SWARTZEL, KUHN, Mr. RASOR.
22. Plane Trigonometry. Three credit hours. *Second term.* *M., W., F., at 9, 11 and 1.* Professor BOHANNAN, Associate Professor MCCOARD, Assistant Professors SWARTZEL, KUHN, Mr. RASOR.
23. Elementary Analytical Geometry and Calculus. Three credit hours. *Third term.* *M., W., F., at 9, 11 and 1.* Prerequisite, course 22. Professor BOHANNAN, Associate Professor MCCOARD, Assistant Professors SWARTZEL, KUHN, CODDINGTON, Mr. RASOR.
24. Problems on all Past Work. One credit hour. *Three terms.* *F., at 10.* Mr. RASOR.
28. Analytical Geometry and Calculus. Three credit hours. *Three terms.* Prerequisite, courses 21, 22, 23, or 31, 32, 33. Professor BOHANNAN, Associate Professor MCCOARD, Assistant Professors SWARTZEL, KUHN, Mr. RASOR.
31. College Algebra. Five credit hours. *First term.* *M., Tu., W., Th., F., at 8, 9, 11, 1 and 2.* Professor BOHANNAN, Associate Professor MCCOARD, Assistant Professors ARNOLD, SWARTZEL, KUHN, CODDINGTON, Mr. RASOR.
32. Plane Trigonometry. Five credit hours. *Second term.* *M., Tu., W., Th., F., at 8, 9, 11, 1 and 2.* Professor BOHANNAN, Associate Professor MCCOARD, Assistant Professors ARNOLD, SWARTZEL, KUHN, CODDINGTON, Mr. RASOR.
33. Analytical Geometry. Five credit hours. *Third term.* *M., Tu., W., Th., F., at 8, 9, 11, 1 and 2.* Prerequisite, course 22 or 32. Professor BOHANNAN, Associate Professor MCCOARD, Assistant Professors ARNOLD, SWARTZEL, KUHN, CODDINGTON, Mr. RASOR.
- 41, 42, 43. Calculus. Five credit hours. *Three terms.* *M., Tu., W., Th., F., at 8, 11 and 1.* Prerequisite, courses 21, 22, 23, or 31, 32, 33. Professor BOHANNAN, Associate Professors MCCOARD and BOYD, Assistant Professors SWARTZEL, KUHN, CODDINGTON.

71, 72, 73. Mechanics. Five credit hours. *Three terms. M., Tu., W., Th., F., at 8, 9 and 11.* Prerequisite, courses 41, 42, 43. Associate Professor BOYD, Assistant Professor KUHN.

25. Higher Mathematics. From one to ten hours a week may be selected from the following courses: (a) Determinants. (b) Modern Geometry. (c) Modern Higher Algebra. (d) Advanced Analytical Geometry. (e) Advanced Calculus. (f) Space Analytics. (g) Differential Equations. (h) Theory of Equations. (i) Higher Plane Curves. (j) Groups. (k) General Function Theory. (l) Elliptic Functions. (m) Potential Function. (n) Spherical Harmonics. (o) Mathematical Electricity. (p) Mathematical Optics. (q) General Mathematical Physics. (r) Higher Geodesy. (s) Infinite Series and Products. (t) The Teaching of Elementary Mathematics.

## Mechanical Engineering

(Office, Room 9, Hayes Hall.)

PROFESSOR MAGRUDER.

34. Thermodynamics. Five credit hours. *Second term. M., Tu., W., Th., F., at 8.* Open only by permission of instructor. Professor MAGRUDER.

## Metallurgy and Mineralogy

(Temporary Office, Townshend Hall.)

PROFESSOR N. W. LORD.

2. Mineralogy. Three credit hours. *Third term. M., W., F., at 11.* Prerequisite, Mathematics 21, 22, 23, or equivalent, and Chemistry 1. Professor LORD.

3. Determinative Mineralogy. Five credit hours. *Third term. M., Tu., W., 1 to 4.* Prerequisite, course 2. Professor LORD.

5. Metallurgical Laboratory. Five credit hours. *Three terms. W., Th., F., 1 to 4.* Prerequisite, Physics 2 and two years of Chemistry. Professor LORD.

# Military Science and Tactics

(Office, The Armory.)

CAPTAIN GEORGE L. CONVERSE, U. S. A.

The Military Department is open five days during each week of each term.

1. Military Drill. Four times a week from the opening of college until the Thanksgiving vacation; four times a week from Thanksgiving until April first; four times a week until the close of the school year. Required of all able-bodied male students during first and second years of their course. *M., Tu., W., Th., at 4.*
2. Tactics. Lectures and recitations. Once a week. *Second term.*
3. Gallery Practice. *Second term.* *M., Tu., W., Th., at 4.*

# Philosophy

(Office, Room 33, University Hall.)

PROFESSOR SCOTT, ASSISTANT PROFESSOR HAINES, DR. DAVIES.

## UNDERGRADUATE COURSES.

18. General Psychology. Three credit hours. *Sec. I, first and second terms.* *M., W., F., at 11.* Professor SCOTT. *Sec. II, second and third terms.* *M., W., F., at 9.* Assistant Professor HAINES.
19. Logic. Three credit hours. *Sec. I, third term.* *M., W., F., at 11.* Professor SCOTT. *Sec. II, first term.* *M., W., F., at 9.* Assistant Professor HAINES.
20. Ethics. Three credit hours. *Third term.* *M., W., F., at 3.* Professor SCOTT.
21. History of Modern Philosophy. Three credit hours. *Second and third terms.* *M., W., F., at 8.* Dr. DAVIES.
- 22a. History of Ancient Philosophy. Three credit hours. *First term.* *M., W., F., at 8.* Dr. DAVIES.
- 22b. History of Mediaeval Philosophy. Three credit hours. *Second term.* *M., W., F., at 9.* Dr. DAVIES.
29. Introduction to Experimental Psychology. Three credit hours. *Three terms.* *Tu., Th., 1 to 3.* *Lecture, Th., at 1.* Prerequisite, Philosophy 18, or Zoology 21. Assistant Professor HAINES.

UNDERGRADUATE AND GRADUATE COURSES.

23. Problems of Philosophy. Three credit hours. *First term.* *M., W., F., at 2.* Prerequisite, courses 18 and 19, or courses 20, 21. Professor SCOTT.
24. Theory of Knowledge. Three credit hours. *Second term.* *M., W., F., at 2.* Prerequisite, courses 18 and 19 or 20, or course 21. Professor SCOTT.
25. Metaphysics. Three credit hours. *Third term.* *M., W., F., at 2.* Prerequisite, courses 18 and 19 or 20, or course 21.
26. Advanced Psychology. Two credit hours. *Three terms.* *Tu., Th., at 9.* Prerequisite, course 18. Dr. DAVIES.
27. Philosophy of Science. Two credit hours. *Three terms.* *Tu., Th., at 2.* Prerequisite, courses 18 and 19 or 20, or course 21. Professor SCOTT.
28. Philosophy of Religion. Two credit hours. *Three terms.* *Tu., Th., at 2.* Prerequisite, courses 18 and 19 or 20, or course 21. Professor SCOTT.
30. Research Work in Experimental Psychology. Two credit hours. *Three terms.* Prerequisite, courses 18 and 19. Assistant Professor HAINES.
31. Plato. Two credit hours. *Three terms.* *Tu., Th., at 3.* Prerequisite, courses 21 and 22. Dr. DAVIES.
32. Aristotle. Two credit hours. *Three terms.* *Tu., Th., at 3.* Prerequisite, courses 21 and 22. Dr. DAVIES.
33. Descartes and Spinoza. Three credit hours. *First term.* *M., Th., F., at 10.* Prerequisite, course 21. Dr. DAVIES.
34. Locke and Leibnitz. Three credit hours. *Second term.* *M., Th., F., at 10.* Prerequisite, course 2. Dr. DAVIES.
35. Berkeley, Hume and Reid. Three credit hours. *Third term.* *M., Th., F., at 10.* Prerequisite, course 21. Dr. DAVIES.
36. Kant, Fichte, Schilling, Hegel. Three credit hours. *Three terms.* *M., Th., F., at 10.* Prerequisite, course 21. Dr. DAVIES.
37. Later German Philosophy. Three credit hours. *Three terms.* *M., Th., F., at 10.* Prerequisite, course 21. Assistant Professor HAINES.
38. Recent and Current Philosophy. Three credit hours. *Three terms.* *M., Th., F., at 10.* Prerequisite, course 21. Assistant Professor HAINES.

39. Psychological Seminary: The Mind and Its Body. Two credit hours. *Three terms.* Prerequisite, courses 18 and 26. Assistant Professor HAINES.
40. Ethical Seminary. Two credit hours. *Three terms.* Prerequisite, courses 20 and 44. Professor SCOTT.
41. Philosophical Seminary. Two credit hours. *Three terms.* Prerequisite, courses 23, 24, 25. Dr. DAVIES.
42. Comparative Psychology. Two credit hours. *Three terms.* *Tu., Th., at 8.* Prerequisite, course 18. Not offered in 1905-06. Assistant Professor HAINES.
43. Scientific Method. Two credit hours. *Three terms.* *Tu., Th., at 9.* Prerequisite, course 19 and an intimate acquaintance with some one science. Assistant Professor HAINES.
44. Advanced Ethics. Two credit hours. *Three terms.* *Tu., Th., at 3.* Prerequisite, courses 18 and 20. Professor SCOTT.
45. Esthetics. Two credit hours. *Three terms.* Dr. DAVIES.
46. Abnormal Psychology. Two credit hours. *Tu., Th., at 8.* Prerequisite, course 18. Assistant Professor HAINES.

## Physical Education

(Office, The Armory.)

Theoretical and practical work in the gymnasium during two years of each student's course.

## Physics

(Office, Room 24, Physics Hall.)

PROFESSOR THOMAS, PROFESSOR COLE, ASSISTANT PROFESSOR KESTER,  
ASSISTANT PROFESSOR EARHART, MR. AYRES, MR. \_\_\_\_.

2. Mechanics and Heat, Electricity and Magnetism, Sound and Light. Three credit hours. *Three terms.* *M., W., F., at 9.* Prerequisite, Mathematics 21, 22, 23 or 31, 32, 33. Professor THOMAS.
3. Problems. Two credit hours. *Three terms.* *Tu., Th., at 9.* Prerequisite, Mathematics 21, 22, 23 or 31, 32, 33. Professor THOMAS, Assistant Professor KESTER, Mr. AYRES, Mr. \_\_\_\_.
4. Electricity and Magnetism. Three credit hours. *First term.* *M., Tu., Th., at 10.* Professor THOMAS.

11. General Physics. Three credit hours. *Three terms. Lecture. W., at 11 or 2; laboratory, Tu., Th., 8 to 10 or Th., F., 2 to 4.* Professor COLE.
12. Laboratory. Three to five credit hours. *Three terms. M., Tu., W., 1 to 4.* Prerequisite, course 2 (or may accompany course 2.) Professor COLE, Assistant Professor KESTER.
17. The Teaching of Physics. Three credit hours. *Third term.* Prerequisite, two terms of college work in physics. Hours to be arranged. Professor COLE.

FOR ADVANCED UNDERGRADUATES AND GRADUATES.

13. Advanced Laboratory. Three to five credit hours. *Three terms.* Prerequisite, course 2 or 11 and course 12. Professor THOMAS, Professor COLE, Assistant Professor KESTER, Assistant Professor EARHART.
14. Theoretical Physics. (a) Advanced Light or (b) Radiation, or (c) Theory of Heat, or (e) Evolution of Experimental Physics. Three to five credit hours. *Three terms.* Prerequisite, course 2 and Calculus. Professor THOMAS, Professor COLE, Assistant Professor KESTER.
16. Physical Seminary. One credit hour. *Three terms.* Prerequisite, a year of college work in physics. Professor COLE.

FOR GRADUATES.

15. Research Laboratory. Three to five credit hours. *Three terms.* Prerequisite, two years of laboratory work in physics. Professor THOMAS, Professor COLE.

## Physiology

(See Anatomy and Physiology.)

## Political Economy

(See Economics and Sociology.)

## Political Science

(See American History and Political Science.)

## Rhetoric and English Language

(See English.)

# Romance Languages and Literatures

(Office, Room 35, University Hall.)

PROFESSOR BOWEN, ASSOCIATE PROFESSOR BRUCE, ASSISTANT PROFESSOR INGRAHAM, MISS HASKELL, MISS JACKSON.

## I. FRENCH.

1. Elementary French. Four credit hours. *Three terms. Sec. I, M., Tu., W., Th., at 9. Miss JACKSON. Sec. II and III, M., Tu., Th., F., at 10. Miss HASKELL, Miss JACKSON. Sec. IV and V, M., Tu., Th., F., at 11. Professor BOWEN, Mr. —. Sec. VI and VII, Tu., W., Th., F., at 2. Associate Professor BRUCE, Miss HASKELL. Sec. VIII, Tu., W., Th., F., at 3. Assistant Professor INGRAHAM.*
2. Modern French Literature. Four credit hours. *Three terms. Sec. I, M., Tu., Th., F., at 10. Associate Professor BRUCE. Sec. II, M., Tu., Th., F., at 11. Miss HASKELL. Sec. III, Tu., W., Th., F., at 2. Assistant Professor INGRAHAM. Prerequisite, course 1 or equivalent.*
3. Science Reading. Four credit hours. *Third term. Tu., W., Th., F., at 9. Prerequisite, course 2, first two terms, or equivalent. Assistant Professor INGRAHAM.*
- \*4. French Comedy of the Seventeenth Century. Three credit hours. *First term. M., Th., F., at 10. Prerequisite, courses 1 and 2. Professor BOWEN.*
- \*5. French Tragedy. Three credit hours. *Second term. M., Th., F., at 10. Prerequisite, courses 1 and 2. Professor BOWEN.*
- \*6. Seventeenth Century Prose. Three credit hours. *Third term. M., Th., F., at 10. Prerequisite, courses 1 and 2. Professor BOWEN.*
7. Advanced Prose Composition. One credit hour. *Three terms. Tu., at 10. Prerequisite, courses 1 and 2. Professor BOWEN.*
- \*8. Literary Criticism in France. Two credit hours. *First term. Tu., Th., at 9. Prerequisite, courses 1 and 2. Associate Professor BRUCE.*
- \*9. Recent French Prose. Two credit hours. *Second term. Tu., Th., at 9. Prerequisite, courses 1 and 2. Associate Professor BRUCE.*

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\* Not given until 1906-1907.

- \*10. Practice in Speaking and Writing French—Based on Daudet's Stories. Two credit hours. *Third term. Tu., Th., at 9.* Prerequisite, courses 1 and 2. Associate Professor BRUCE.
- 11. French Travel Writers. Two credit hours. *First term. Tu., Th., at 9.* Prerequisite, courses 1 and 2. Associate Professor BRUCE.
- 12. Eighteenth Century Prose. Two credit hours. *Second term. Tu., Th., at 9.* Prerequisite, courses 1 and 2. Associate Professor BRUCE.
- 13. Advanced Conversational Practice—Based on Stories of Coppée and Maupassant. Two credit hours. *Third term. Tu., Th., at 9.* Prerequisite, courses 1 and 2. Associate Professor BRUCE.
- \*14. French Seminary A. Two credit hours. *Three terms. Tu., Th., at 2.* Prerequisite, courses 1, 2, 4, 5, 6 and 7, or an equivalent. Professor BOWEN.
- 15. French Seminary B. Two credit hours. *Three terms. Tu., Th., at 2.* Prerequisite, courses 1, 2, 4, 5, 6 and 7 or an equivalent. Professor BOWEN.
- 16. French Comedy of the Eighteenth Century. Three credit hours. *First term. M., Th., F., at 10.* Prerequisite, courses 1 and 2. Professor BOWEN.
- 17. French Society in the Seventeenth Century. Three credit hours. *Second term. M., Th., F., at 10.* Prerequisite, courses 1 and 2. Professor BOWEN.
- 18. Precursors of French Romanticism. Three credit hours. *Third term. M., Th., F., at 10.* Prerequisite, courses 1 and 2. Professor BOWEN.
- 19. Graduate Courses. Courses arranged at the beginning of each year to meet the needs of individual graduate students. Professor BOWEN.

## II. ITALIAN.

- 1. Elementary Italian. Two credit hours. *Three terms. Tu., Th., at 3.* Professor BOWEN or Associate Professor BRUCE.
- 2. Advanced Italian. Two credit hours. *Three terms.* Hours to be arranged. Associate Professor BRUCE.

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\* Not given until 1906-1907.

### III. SPANISH.

1. Elementary Spanish. Four credit hours. *Three terms. Sec. I, M., Tu., Th., F., at 11; Sec. II, Tu., W., Th., F., at 3.* Assistant Professor INGRAHAM, Miss HASKELL.
2. Advanced Spanish. Two credit hours. *Three terms. Tu., Th., at 1.* Professor BOWEN or Assistant Professor INGRAHAM.

## Sociology

(See Economics and Sociology.)

## Spanish

(See Romance Languages.)

## Zoology and Entomology

(Office, Room 3, Biological Hall.)

PROFESSOR OSBORN, ASSOCIATE PROFESSOR HINE, ASSOCIATE PROFESSOR LANDACRE, MR. SANDERS, MR. SURFACE.

31. Invertebrate and Vertebrate. Three credit hours. *Three terms. Lecture, Tu., Th., at 8, or M., F., at 10. Laboratory, Tu., 2 to 4.* Associate Professor LANDACRE.
2. Comparative Anatomy of Vertebrates. Three or five credit hours. *Three terms. Quiz, W., at 1. Laboratory, M., Tu., W., 1 to 4.* Prerequisite, course 1 or equivalent. Associate Professor LANDACRE.
12. Gross Anatomy of the Frog. Three or five credit hours. *First term.* Time to be arranged. Prerequisite, course 1. Associate Professor LANDACRE.
13. Minute Anatomy of the Frog. Three or five credit hours. *Second term.* Time to be arranged. Prerequisite, course 1. Associate Professor LANDACRE.
14. Embryology of the Frog. Three or five credit hours. *Third term.* Time to be arranged. Prerequisite, course 1. Associate Professor LANDACRE.
- 15, 16, 17. Invertebrate Morphology. Three or five credit hours. *Three terms.* Time to be arranged. Prerequisite, course 1. Professor OSBORN.

18. Invertebrate Embryology. Three or five credit hours. *Three terms.* *Laboratory.* Time to be arranged. For graduates. Prerequisite, courses 1 and 2. Professor OSBORN.
19. Vertebrate Embryology: Karyokinesis, etc. Three or five credit hours. *First term.* *Lecture, Th., at 1.* *Laboratory, Th., F., 1 to 4.* Prerequisite, course 1. Associate Professor LANDACRE.
20. Vertebrate Embryology: Chick and Mammal. Three or five credit hours. *Second and third terms.* *Lecture, Th., at 1.* *Th., F., 1 to 4.* Prerequisite, courses 1 and 19. Associate Professor LANDACRE.
21. Comparative Neurology. Three to five credit hours. *Three terms.* Time to be arranged. Prerequisite, course 1 or equivalent, but is open to advanced students in psychology and pedagogy. Associate Professor LANDACRE.
22. Cytology. Three or five credit hours. *Three terms.* Time to be arranged. Prerequisite, course 1 and equivalent of 2, or 15, 16, 17. Professor OSBORN.
23. Entomology. Three or five credit hours. *Three terms.* Time to be arranged. Prerequisite, course 1. Professor OSBORN.
24. Ornithology. Two credit hours. *Three terms, Lecture, M., at 10.* *Laboratory, Tu., 9 to 11.* Associate Professor HINE.
25. Research Work. Five or ten credit hours. *Three terms.* Prerequisite, course 1 and the equivalent of 2 or 15, 16, 17, or 19, 20. Professor OSBORN.
26. Seminar. One credit hour. *Three terms.* F., at 4. Professor OSBORN, Associate Professors HINE and LANDACRE.
27. Teachers' Course. Two or three credit hours. *Three terms.* Professor OSBORN, Associate Professor LANDACRE.
30. Invertebrate Zoology. Five credit hours. For Graduates only. Time to be arranged. Professor OSBORN.

## Fees and Expenses

### GENERAL CHARGES.

All term dues must be paid at the opening of each term as a condition of admission to classes.

INCIDENTAL FEE.—A charge of six dollars a term, eighteen dollars a year, is made against all students, under the head of incidental expense. In the case of former students if this fee is not paid until the second day of the term one dollar will be added, and for each succeeding day of delinquency fifty cents will be added.

**TUITION.**—Tuition is free in the College of Arts, Philosophy and Science. But students who elect five hours or less in the College of Law pay a fee of \$7.50 per semester; more than five hours, \$22.50.

#### LABORATORY FEES.

A flat fee of one dollar per term is charged in all laboratory courses. In addition to this fee, all students are required to pay for materials consumed. Students in chemistry are also required to make a deposit of five dollars at the beginning of each term at the Chemical Store Room to cover the cost of their laboratory supplies.

The laboratory courses, for each of which the fee is one dollar per term, are as follows: Anatomy and Physiology, 3, 4, 5, 9, 11; Astronomy 2, 4, 5, 6; Bacteriology, 5, 6; Botany, all courses; Chemistry, all courses except 11, 21, 30, 35, 40, 25, 26, 28, 36; Civil Engineering, 21; Domestic Science, 1, 2, 3; Domestic Art, 1, 2, 3; Drawing, 7, 10, 14, 17, 18, 19, 24, 25, 26; Electrical Engineering, 7, 9, 11; Geology, 13, 14, 15, 16, 19, 20, 11, 12; Metallurgy, 3, 5; Physics, 11, 12, 13, 15; Zoology and Entomology, all courses except 26, 27.

#### LOCKER FEE.

A fee of one dollar a term is required from those who make use of a locker in the gymnasium.

#### CADET UNIFORMS.

The uniform with which the members of the battalion are required to provide themselves costs (without overcoat) about fourteen dollars. It is quiet in pattern, and is designed to be worn in place of civilian dress.

#### GRADUATION FEE.

A fee of five dollars, to cover expense of graduation and diploma is required of each person receiving one of the ordinary degrees from the University, and this fee must be paid before the degree is conferred. A like fee of ten dollars is charged to each person receiving one of the higher graduate degrees.

#### AUDITOR'S FEE.

On presentation to the Bursar of the written consent of the head of a department, and on the payment to the Bursar of an auditor's fee of one dollar, any person engaged in teaching is permitted to attend, in that department, any class or course (not to exceed three hours a week for one-half year) which is announced to be especially for teachers or those intending to teach.

## Rooms and Board

There are two dormitories on the University grounds for the use of students. Each occupant is charged by the University a rent of a dollar and a half a term.

The South Dormitory affords unfurnished rooms to such students as desire to board themselves, and thus to reduce their expenses to a minimum. The expense of living in this way is about two dollars per week. Applications for rooms should be made to the President of the University.

The North Dormitory will accommodate more than sixty students. Board, furnished rooms, fuel, light and washing are, at present prices, supplied for about three dollars and twenty-five cents a week. Students will be admitted on special recommendation to the President of the University.

Boarding clubs are also formed in the neighborhood of the University. Furnished rooms are rented at seventy-five cents to one dollar a week for each student, and the cost of table board is two dollars to three dollars a week.

Board with furnished rooms can be obtained in private families, within convenient distances of the University, at rates varying from three and a half dollars to five dollars a week. The ruling rate may be taken as four dollars.

## Fellowships

To encourage graduates of this University, and of other similar and approved institutions in this State, to continue their studies and to undertake advanced work leading to the higher degrees, the University authorities have established fellowships in several departments. These demand about one-half of the time of the fellow for laboratory or other similar assistance—as far as possible along the line of his graduate study. The remainder of his time is given to graduate work. The fellowships pay from \$150 to \$300 for the University year. At present there are three such fellowships in English, two each in Botany, Chemistry, Anatomy and Physiology, German, Zoology and Entomology, and one each in Romance Languages and in Library work.

## Self Support

There is a large amount of work upon the University farm which is assigned to students, preference being given to those who are studying Agriculture. *But the University cannot promise work to all applicants.* Many students find work in private families, in offices, and in various occupations, by means of which they defray a portion of their expenses. A person of ability and energy, who is a master of a trade, or who can do good work of any kind, can generally find employment, but prospective students are cautioned against depending wholly upon such uncertain sources of income.

Students should distinctly understand that where they attempt entire or partial self-support they should lengthen the term of study.

As an accommodation the executive office cooperates as far as possible in this matter. The Y. M. C. A. offers its services in helping young men to secure employment. Very much depends, however, on the individual's power of initiative. Students should not come to the University expecting others to find places for them. They should report to the executive office from time to time as to their needs and their work. This will enable the authorities to be more helpful than otherwise would be possible.

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VOLUME X

NUMBER 9

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# Ohio State University Bulletin

College of Arts Philosophy and  
Science

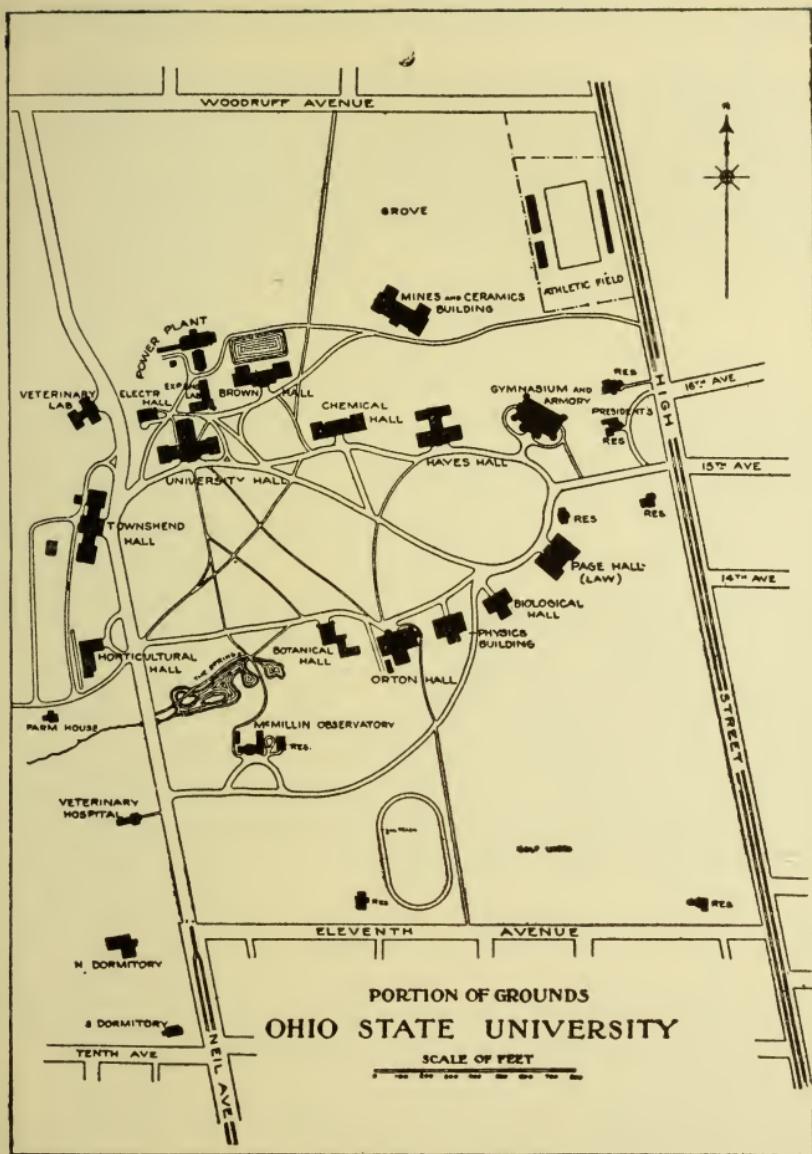


MARCH 15, 1906

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PUBLISHED BY THE UNIVERSITY AT COLUMBUS





## UNIVERSITY CALENDAR.

1906.

Entrance examinations, (8 a. m.) Tuesday to Saturday, June 12-16.  
Summer Term, June 25 to August 3.

Entrance examinations, (8 a. m.) Tuesday to Saturday, September 11-15.

First term begins—Registration Day—Tuesday, September 18.

President's Annual Address, (11 a. m.) Friday, September 21.

Latest date of admission to candidacy for a degree at the Commencement of June, 1907, September 29.

Latest date for filing theses subjects, Saturday, December 15.

First term ends, December 19.

### CHRISTMAS VACATION.

1907.

Second term begins—Registration Day—Wednesday, January 2.

Washington's Birthday, Friday, February 22.

Second term ends, Friday, March 29.

### SPRING RECESS.

Third term begins—Registration Day—Wednesday, April 3.

Field Day—Athletic Association—Saturday, May 11.

Competitive Drill—Cadet Batallion—Saturday, May 25.

Memorial Day, Thursday, May 30.

Final examinations, Friday to Thursday, June 7-13.

Latest date for presenting theses, Saturday, June 8.

Entrance examinations, (8 a. m.) Tuesday to Saturday, June 11 to 15.

Latest date for filing bound copy of theses, Friday, June 14.

Commencement, Wednesday, June 19.

### ORGANIZATION

The Ohio State University, located in Columbus two miles north of the Union Station, is a part of the public educational facilities maintained by the State. It comprises six colleges:

The College of Agriculture and Domestic Science,

The College of Arts, Philosophy, and Science,

The College of Engineering,

The College of Law,

The College of Pharmacy,

The College of Veterinary Medicine.

This bulletin is devoted exclusively to the work of the College of Arts, Philosophy, and Science.

## COLLEGE OF ARTS PHILOSOPHY AND SCIENCE

This college comprises those courses of study that are designed to furnish a liberal education in the languages and literatures, the sciences, mathematics, philosophy, history, politics, administration, economics, sociology, commerce, and educational theory, as distinguished from the technical and professional courses which constitute the work of the other colleges.

### DEPARTMENTS

The college of Arts, Philosophy, and Science includes the following departments: American History and Political Science, Anatomy and Physiology, Astronomy, Bacteriology, Botany, Chemistry, Economics and Sociology, Education, English, European History, Geology, Germanic Languages and Literatures, Greek Language and Literature, Latin Language and Literature, Mathematics, Military Science and Tactics, Philosophy, Physical Education, Physics, Romance Languages and Literatures, Zoology and Entomology. The following departments of other colleges of the University offer a limited amount of work as elective studies in the college of Arts, Philosophy, and Science: Art, Civil Engineering, Domestic Science, Architecture and Drawing, Electrical Engineering, Mechanical Engineering, Metallurgy and Mineralogy.

### GRADUATE SCHOOL

The graduate instruction given in the college of Arts, Philosophy, and Science is organized in a Graduate School. A special bulletin describing the organization, admission requirements, and work of the Graduate School may be obtained on application to the Secretary of the University Faculty.

## THE LAKE LABORATORY

The University maintains a Lake Laboratory at Sandusky during the summer vacation, which is designed to provide opportunity for the investigation of the biology of the lake region, and for giving certain courses of instruction in the departments of Botany, Zoology, and Entomology. A new and commodious laboratory building, capable of accommodating at least one hundred students and investigators, is well provided with tables, dark rooms, aquaria, water, and gas. Microscopes and other apparatus are supplied from the University. Boats, collecting apparatus, dredges, seines, etc., are well supplied, and special attention is given to methods of collecting and to field work. For further information write for a special bulletin which may be obtained from the Secretary of the University Faculty.

## FACULTY AND INSTRUCTORS

WILLIAM OXLEY THOMPSON, D. D., LL. D., President of the University.

JOSEPH VILLIERS DENNEY, B. A., Dean and Professor of English.

WILLIAM HENRY SCOTT, LL. D., Professor of Philosophy.

SIDNEY AUGUSTUS NORTON, LL. D., Emeritus Professor of Chemistry.

SAMUEL CARROLL DERBY, A. M., Professor of the Latin Language and Literature.

JOSIAH RENICK SMITH, A. M., Professor of the Greek Language and Literature.

BENJAMIN FRANKLIN THOMAS, Ph. D., Professor of Physics.

GEORGE WELLS KNIGHT, Ph. D., Professor of American History and Political Science.

ROSSER DANIEL BOHANNAN, B. Sc., C. E., E. M., Professor of Mathematics.

ALBERT MARTIN BLEILE, M. D., Professor of Anatomy and Physiology.

WILLIAM ASHBROOK KELLERMAN, Ph. D., Professor of Botany.

BENJAMIN LESTER BOWEN, Ph. D., Professor of Romance Languages and Literatures.

ALLEN CAMPBELL BARROWS, A. M., D. D., Professor of English.

WILLIAM MCPHERSON, Ph. D., Professor of Chemistry.

HERBERT OSBORN, M. Sc., Professor of Zoology and Entomology, and Director of the Lake Laboratory.

HENRY CURWEN LORD, B. Sc., F. R. A. S., Professor of Astronomy and Director of the Emerson McMillin Observatory.

GEORGE L. CONVERSE, Captain (retired), U. S. A., Professor of Military Science and Tactics.

CHARLES SMITH PROSSER, M. Sc., Professor of Geology.

JOHN ADAMS BOWNOCKER, D. Sc., Professor of Inorganic Geology, and Curator of the Museum.

ALFRED DODGE COLE, A. M., Professor of Physics.

WILBUR HENRY SIEBERT, A. M., Professor of European History.

LEWIS ADDISON RHOADES, Ph. D., Professor of Germanic Languages and Literatures.

DAVID R. MAJOR, Ph. D., Professor of Education.

CHARLES BRADFIELD MORREY, B. A., M. D., Professor of Bacteriology.

JAMES EDWIN HAGERTY, Ph., D., Professor of Economics and Sociology.

EMILY E. BRACKEN, Professor of Art.

OLIVE B. JONES, B. A., University Librarian.

GEORGE WASHINGTON McCOARD, M. A., Associate Professor of Mathematics.

ARTHUR WINFRED HODGMAN, Ph. D., Associate Professor of the Classic Languages.

WILLIAM EDWARDS HENDERSON, Ph. D., Associate Professor of Chemistry.

JOSEPH RUSSELL TAYLOR, M. A., Associate Professor of English.

JAMES ELLSWORTH BOYD, M. Sc., Associate Professor of Mathematics.

CHARLES A. BRUCE, B. A., Associate Professor of Romance Languages, and Secretary of the Faculty.

OHIO STATE UNIVERSITY

CHARLES WILLIAM FOULK, B. A., Associate Professor of Chemistry.

JOHN H. SCHAFFNER, M. Sc., Associate Professor of Botany.

JAMES STEWART HINE, B. Sc., Associate Professor of Entomology.

FRANCIS LEROY LANDACRE, B. A., Associate Professor of Zoology.

WALLACE STEDMAN ELDEN, Ph. D., Associate Professor of the Classic Languages.

MATTHEW BROWN HAMMOND, Ph. D., Associate Professor of Economics and Sociology.

WILLIAM LUCIUS GRAVES, M. A., Assistant Professor of English.

CHARLES LINCOLN ARNOLD, M. Sc., Assistant Professor of Mathematics.

KARL DALE SWARTZEL, M. Sc., Assistant Professor of Mathematics.

GEORGE H. MCKNIGHT, Ph. D., Assistant Professor of English.

HARRY WALDO KUHN, Ph. D., Assistant Professor of Mathematics.

FREDERICK EDWARD KESTER, Ph. D., Assistant Professor of Physics.

THOMAS HARVEY HAINES, Ph. D., Assistant Professor of Philosophy.

ALONZO HUBERT TUTTLE, A. M., Assistant Professor of American History.

EDWIN F. CODDINGTON, Ph. D., Assistant Professor of Mathematics.

EDGAR S. INGRAHAM, Ph. D., Assistant Professor of Romance Languages.

ROBERT F. EARHART, Ph. D., Assistant Professor of Physics.

GEORGE B. VILES, Ph. D., Assistant Professor of Germanic Languages and Literatures.

HENRY R. SPENCER, Ph. D., Assistant Professor of American History and Political Science.

EDGAR HOLMES McNEAL, Ph. D., Assistant Professor of European History.

CARSON SAMUEL DUNCAN, M. A., Assistant Professor of English.

FAYETTE AVERY MCKENZIE, B. S., Assistant Professor of Economics and Sociology.

MAUD W. MARTIN, Ph. B., Director of Physical Education for Women.

ARTHUR ERNEST DAVIES, Ph. D., Instructor in Philosophy.

BERTHOLD A. EISENLOHR, M. A., Instructor in Germanic Languages.

SAMUEL EUGENE RASOR, B. Sc., M. A., Instructor in Mathematics.

DON CARLOS HUDDLESON, G. Ph., Instructor in Physical Education.

HARRY HAMILTON SNIVELY, A. M., M. D., Instructor in Anatomy and Physiology.

CATHERINE E. ANDREWS, M. A., Instructor in Chemistry.

MAY THOMAS, Ph. D., Instructor in Germanic Languages.

MARY E. HASKELL, M. A., Instructor in Romance Languages.

RAYMOND JESSE SEYMOUR, B. Sc., Assistant in Anatomy and Physiology.

BENJAMIN FRANKLIN MAAG, M. Sc., Assistant in Astronomy.

FRANK C. MCKINNEY, M. A., Assistant in English.

### ADMISSION

The University is open on equal terms to both sexes.

Applicants for admission to the College of Arts, Philosophy, and Science must be at least 16 years of age. Each must be provided with credentials of scholarship from his last instructor or from the last institution with which he has been connected, and with a certificate of good moral character.

There are two modes of admission—by examination and by certificate.

## ENTRANCE BOARD

The admission of students is in the hands of the Entrance Board, who conduct examinations, receive and pass upon certificates and give all necessary information to applicants. After passing upon the credentials of the applicant for admission, or giving him the necessary examinations, the Board will give the applicant an entrance card, showing the number and nature of the credits allowed, and this card will be good toward entrance, up to the face value of the number of units granted.

**ADVANCED STANDING.** Applicants who have successfully completed at least one year's work in an approved college, and who bring explicit and official certificates describing their course of study and scholarship, and also certificates of honorable dismissal, will be admitted without examination and without entrance conditions to any college of the University. All correspondence should be addressed to the Entrance Board, Ohio State University, Columbus.

## ENTRANCE EXAMINATIONS

Entrance examinations will be held June 12 to 15, and September 11 to 16, 1906. A part of the examinations may be taken in June and the remainder in September. All applicants for admission who are not graduates of accredited or recognized schools must take examinations for admission.

**SCHEDULE.**—Examinations will be from 8 to 12 a. m. and from 1 to 5 p. m.

Tuesday.

A. M.—Greek and Roman History, English History, General History.

P. M.—Composition, Rhetoric and Classics, Chemistry, Geology.

Wednesday.

A. M.—Algebra, German, English Grammar, Descriptive Geography.

P. M.—Plane Geometry, Physical Geography, Arithmetic.

Thursday.

A. M.—Civics, Solid Geometry, Zoology.  
P. M.—Beginning Latin, Cæsar, Astronomy.

Friday.

A. M.—Physics, Physiology, Botany.  
P. M.—U. S. History, French, English Literature.

Saturday.

A. M.—Vergil, Cicero.

## CERTIFICATES

Applicants for admission may be admitted on presentation of properly indorsed certificates from secondary schools which have been "accredited" or "recognized" by the University.

Accredited schools are those four-year secondary schools whose courses of study have been found by inspection to teach satisfactorily such branches of study as prepare students for all colleges of the University. All graduates holding certificates from this class of schools will be admitted without examination, provided the required entrance branches are covered in the certificates.

Recognized schools are those three or four-year secondary schools whose courses of study do not prepare students for all colleges of the University, but have been found by inspection to teach satisfactorily not less than 10 units of the requirements for admission. Any Graduate holding a certificate from one of these schools will be admitted without examination to any college of the University for which he is prepared.

A certificate from a recognized school, when it is presented by a graduate thereof, will be accepted toward admission, but an applicant holding such a certificate, will be subject to examination in the requirements for admission not covered by the certificate.

No applicant will be admitted by certificate who is not a graduate of the school from which he bears a certificate.

## LIST OF ACCREDITED AND RECOGNIZED SCHOOLS IN OHIO

These lists are subject to change from year to year as schools are revisited. Persons are advised therefore to consult the latest bulletins and catalogues of the University.

Alliance R.	Clintonville R.
Akron A.	Clyde A.
Andover R.	Collinwood A.
Ashland A.	Columbus—
Ashtabula A.	Central A.
Ashville R.	East A.
Athens A.	North A.
Baltimore R.	South A.
Barnesville A.	Columbus School for Girls A.
Batavia R.	Columbus Grove R.
Bedford R.	Conneaut R.
Bellaire A.	Corning R.
Bellefontaine A.	Coshocton A.
Bellevue R.	Covington R.
Bethel Township, Clark Co. R.	Cumberland R.
Bethel Township, Miami Co. R.	Cuyahoga Falls R.
Bowling Green A.	Dayton A.
Bryan A.	Defiance R.
Bucyrus A.	Delaware A.
Caldwell R.	Delta R.
Cambridge A.	DeGraff R.
Canal Dover A.	Dennison R.
Canal Winchester R.	East Cleveland A.
Canton A.	East Liverpool A.
Carey R.	Elyria A.
Celina R.	Euclid R.
Chagrin Falls R.	Findlay A.
Chardon A.	Fort Recovery R.
Chillicothe A.	Fostoria A.
Cincinnati—	Fremont A.
Hughes A.	Friends' Boarding School
Walnut Hills A.	(Barnesville R.
Woodward A.	Galion A.
Cincinnati Technical School A.	Gallipolis A.
Circleville A.	Garrettsville R.
Cleveland—	Georgetown A.
Central A.	Germantown A.
East A.	Glendale A.
Lincoln A.	Gnadenhutten R.
South A.	Grand River Institute A.
West A.	Granville R.
Glenville A.	Greenfield A.

Greenville A.	New Lyme Institute A.
Grove City R.	New Philadelphia A.
Groveport R.	New Vienna R.
Hamilton A.	Niles R.
Harmony Township (Clark County) R.	North Baltimore R.
Harrison R.	Norwalk A.
Hillsboro A.	Norwood A.
Ironton A.	Oak Harbor R.
Jackson A.	Oberlin Academy A.
Jefferson A.	Oberlin A.
Kenton A.	Orrville R.
Kingsville R.	Osborne R.
Kirtland R.	Ottawa R.
Lakeside A.	O. S. & S. O. Home R.
Lakewood A.	Painesville A.
Lancaster A.	Pandora R.
Lebanon R.	Pataskala R.
Leipsic R.	Perrysburg R.
Lima A.	Piqua A.
Lockland A.	Plain City R.
Logan A.	Pleasant Ridge R.
London A.	Pomeroy R.
Lorain R.	Port Clinton R.
Madison R.	Portsmouth A.
Madisonville A.	Quaker City R.
Mad River Township (Enon Village) R.	Ravenna R.
Malta R.	Reynoldsburg R.
Mansfield A.	Richwood R.
Marietta A.	Ripley R.
Marion A.	Salem A.
Martins Ferry A.	Salineville R.
Marysville A.	Sandusky A.
Massillon R.	Shelby R.
Medina A.	Sidney A.
Mechanicsburg A.	Solon R.
Miamisburg A.	Somerset R.
Middletown A.	South Charleston R.
Mt. Sterling R.	Spencerville R.
Mt. Vernon A.	Springfield A.
Napoleon R.	Steubenville A.
Nelsonville A.	St. Mary's A.
Newark A.	St. Paris R.
New Bremen R.	Tiffin A.
New Lexington R.	Tippecanoe City R.
New London A.	Toledo A.
	Troy A.
	Uhrichsville R.

Urbana A.	West Jefferson R.
Upper Sandusky R.	West Milton R.
Utica R.	West Unity R.
Van Wert A.	Willoughby A.
Wapakoneta R.	Woodsfield R.
Warren A.	Wooster A.
Washington C. H. A.	Worthington R.
Wauseon R.	Wyoming A.
Wellington A.	Xenia A.
Wellston A.	Youngstown A.
Wellsville A.	Zanesville A.

#### ACCREDITED SCHOOLS OF OTHER STATES

Michigan—Albion; Ann Arbor; Alpena; Adrian, Benton Harbor Collegiate Institute; Battle Creek; Bay City; Charlotte; Bessemer; Calumet; Coldwater; Detroit—Western, Eastern, Central, Home and Day, Detroit University; Delray; Escanaba; Ferris Institute; Flint; Grand Rapids Central; Hancock; Ionia; Ishpeming; Iron Mountain; Jackson; Kalamazoo; Lansing; Lake Linden; Ludington; Marshall; Manistee; Menominee; Michigan Seminary (Kalamazoo); Muskegon; Michigan Military Academy (Orchard Lake) Mt. Clemens; Marquette; Negaunee; Owosso; Port Huron; Niles; Pontiac; Petoskey; Sault Ste. Marie; Saginaw—West Side, East Side; St. Joseph; Traverse City; West Bay City; Ypsilanti.

Indiana—Elkhart City; Fort Wayne; Howe Military School; LaPorte; Michigan City; Richmond; South Bend; Shortridge and Manual Training, Indianapolis.

Illinois—Aurora (East); Aurora (West); Bloomington; Chicago—Austin, Calumet, Englewood, Hyde Park, Jefferson, John Marshall, Joseph Medill, Lake, Lake View, North West Division, Richard T. Crane, Manual Training, Robert A. Waller, South Chicago, Wendell Phillips, William McKinley; Decatur; De Kalb Tp.; La Salle & Peru Tp.; Lyons Tp. (La Grange); Moline; Oak Park Tp.; Ottawa Tp.; Peoria; Pontiac Tp.; Princeton; Rockford; Rock Island; Sterling Tp.; Thornton Tp.; (Harvey).

Iowa—Boone; Burlington; Capital Park; Cedar Rapids; Charles City; Clinton; Corning; Council Bluffs; Davenport; Des Moines—East, North, West; Fort Dodge; Grinnell; Iowa City; Le Mars; Mason City; Muscatine; Ottumwa; Sheldon; Sioux City.

Wisconsin—Appleton; Ashland; Baraboo; Wayland Academy at Beaver Dam; Beloit; Berlin; Chippewa Falls; Eau Clair; Fond du Lac; Grand Rapids; Janesville; La Crosse; Madison; Marinette; Marshfield; Menomonie; Milwaukee—East Division, West

Division, South Division, Milwaukee Downer Seminary; New Richmond; Oshkosh; Portage; Racine; Ripon; Sheboygan; Sparta; Stevens Point; Superior—Blaine, Dewey; Waukesha; Whitewater.

Minnesota—Duluth; Minneapolis—Central, East Side, North Side, South Side; Redwing; St. Paul—Central, Cleveland, Humboldt; Winona.

Missouri—Columbia; Kansas City Central, Kansas City Manual Training; Trenton; St. Louis—McKinley, St. Louis Central.

Colorado—Canon City; Cripple Creek; Denver, West Side; Durango; Ft. Collins; Golden; Grand Junction; Greeley; La Junta; Leadville; Pueblo, Central; Pueblo, District No. 1; Trinidad; Victor.

South Dakota—Yankton.

Certificates will not be accepted for admission from High Schools that are not named in the above lists.

Certificates from "accredited" and "recognized" schools will be accepted in lieu of examination only under the following conditions:

(a) The certificate must state in detail the studies pursued, the text-books used, the amount of work done in each study, the amount of time devoted to it, and the fact that the applicant has successfully passed in the work.

(b) The certificate will be accepted for such studies only, or such part of each, as it shall show to have been satisfactorily accomplished.

(c) Every such certificate must be accompanied with a diploma or must show that the candidate has been graduated from the school from which he comes. Blank certificates may be obtained by addressing the Entrance Board, Ohio State University, Columbus. Certificates should be filled out and returned to the University as early as possible after the close of the schools in June, and in any event not later than September 8.

## REQUIREMENTS FOR ADMISSION

Applicants to be admitted to full standing must obtain credit by examination or certificate for fifteen units, chosen from the five groups which follow, subject to the restrictions stated therein. (A unit is a course of study covering a school year of not less than thirty-five weeks with four or five

periods of at least forty-five minutes each per week.) No one under 21 years of age\* will be admitted on less than 13 units.

#### (A) ENGLISH GROUP

Two units are required in this group. An applicant presenting one unit in this group will be admitted *conditionally*, if his arrearage in all of the groups does not exceed two units. All arrearages must be made good within two years after admission.

English Composition and Rhetoric .....	1 unit
English Classics .....	1 unit
English Literature .....	1 unit

#### (B) HISTORY GROUP

Two units are required in this group. An applicant presenting one unit in this group will be admitted *conditionally*, if his arrearage in all of the groups does not exceed two units. All arrearages must be made good within two years after admission. Preparation in excess of two units in this group may be offered in lieu of the extra units of group (E).

Civil Government .....	$\frac{1}{2}$ unit
United States History .....	$\frac{1}{2}$ unit
General History .....	$\frac{1}{2}$ or 1 unit
Greek and Roman History .....	$\frac{1}{2}$ or 1 unit
English History .....	$\frac{1}{2}$ unit

#### (C) MATHEMATICS GROUP

Three units are required in this group. An applicant presenting two units in this group will be admitted *conditionally*, if his arrearage in all of the groups does not exceed two units. All arrearages must be made good within two years after admission.

Algebra (through quadratics) .....	1 unit
Algebra (beyond quadratics) .....	$\frac{1}{2}$ unit
Geometry (plane) .....	1 unit
Geometry (solid and spherical) .....	$\frac{1}{2}$ unit
Trigonometry (plane) .....	$\frac{1}{2}$ unit

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\*A person twenty-one years of age, or over, who desires to pursue a special line of work and does not desire to become a candidate for a degree, may be admitted by vote of the Executive Committee to such classes as he is qualified to enter; provided, that if he afterwards becomes a candidate for a degree he must pass the requirements for admission at least one year before the degree is conferred. See "Admission to Special Studies."

## (D) SCIENCE GROUP

Two units are required in this group, including physics. An applicant presenting one unit in this group will be admitted conditionally, if his arrearage in all of the groups does not exceed two units. All arrearages must be made good within two years after admission. Preparation in excess of two units in this group may be offered in lieu of the extra units of group (E).

Physics .....	1 unit
Physical Geography .....	$\frac{1}{2}$ unit
Botany .....	$\frac{1}{2}$ unit
Chemistry .....	1 unit
Physiology .....	$\frac{1}{2}$ unit
Zoology .....	$\frac{1}{2}$ unit
Geology .....	$\frac{1}{2}$ unit
Astronomy .....	$\frac{1}{2}$ unit

## (E) FOREIGN LANGUAGE GROUP

Six units are required in this group; or two *extra* units from the preceding groups, and *four* units from this. A deficiency of *two* units is allowed in this group if the total arrearage in all of the groups does not exceed *two* units. All arrearages must be made good within two years after admission.

Latin .....	2 to 4 units
Greek .....	2 to 4 units
German .....	2 to 4 units
French .....	2 to 4 units
Spanish .....	2 to 4 units

The extent and character of the work required in each subject mentioned above is as follows:

## DESCRIPTION OF SUBJECTS ACCEPTED FOR ADMISSION

## (A) ENGLISH GROUP

(1) English Composition and Rhetoric. One unit. Each applicant must be able to write clear and correct English, and no applicant will be accepted in English whose work is seriously defective in spelling, punctuation, grammar and paragraph structure. The proper preparation for this part of the requirement is practice in composition through the four preparatory years, with correction of themes by the teacher and revision by the pupil. Subjects for themes should be taken from the books prescribed for general reading below [see (2) (b)] and also from the pupil's observation and experience. Practice should be afforded in writing narrative, description, exposition and argumentation. Applicants

should be familiar with those principles of Rhetoric which are most helpful in elementary composition; viz., the principles of sentence structure, outlining, paragraphs, and choice of words. The amount and kind of work required is indicated in Scott and Denney's *Elementary Composition and Composition-Literature*.

(2) English Classics. (a) A thorough knowledge of the subject-matter, form, and structure of Shakespeare's *Macbeth*, Milton's *Lycidas*, *Comus*, *L'Allegro*, *Il Penseroso*; Burke's Speech on Conciliation with America (or Washington's Farewell Address and Webster's First Bunker Hill Oration); Macaulay's *Life of Johnson* (or Carlyle's *Essay on Burns*). (b) A general knowledge of the substance of ten books selected from the following groups: Group 1 (two to be selected), Shakespeare's *As You Like It*, *Julius Cæsar*, *Merchant of Venice*, *Twelfth Night*, *Henry the Fifth*; Group 2 (one to be selected), Bunyan's *Pilgrim's Progress*, part 1; Bacon's *Essays*, *The Sir Roger de Coverley Papers* in the *Spectator*, Franklin's *Autobiography*; Group 3 (one to be selected), Chaucer's *Prologue*, selections from Spenser's *Faerie Queene*, Pope's *Rape of the Lock*, Goldsmith's *Deserted Village*, Palgrave's *Golden Treasury*, first series, books ii and iii, with especial attention to Dryden, Collins, Gray, Cowper and Burns; Group 4 (two to be selected), Hawthorne's *House of the Seven Gables*, Thackeray's *Henry Esmond*, George Eliot's *Silas Marner*, Dickens' *A Tale of Two Cities*, Scott's *Ivanhoe*, Quentin Durward, Goldsmith's *Vicar of Wakefield*, Mrs. Gaskell's *Cranford*, Blackmore's *Lorna Doone*; Group 5 (two to be selected), Emerson's *Essays* (selected), Ruskin's *Sesame and Lilies*, Irving's *Sketch Book*, Carlyle's *Heroes and Hero Worship*, DeQuincey's *Joan of Arc and the English Mail Coach*, Lamb's *Essays of Elia*; Group 6 (two to be selected), Palgrave's *Golden Treasury*, first series, book iv, with especial attention to Wordsworth, Keats and Shelley, Coleridge's *Ancient Mariner*, Lowell's *Vision of Sir Launfal*, Scott's *Lady of the Lake*, Poe's *Poems*, Tennyson's *Gareth and Lynette*, *Lancelot and Elaine*, *The Passing of Arthur*, Arnold's *Sohrab and Rustum*, Byron's *Mazeppa*, *The Prisoner of Chillon*, Macaulay's *Lays of Ancient Rome*, and Browning's *Cavalier Tunes*, *Lost Leader*, *How They Brought the Good News*, Evelyn Hope, *Home Thoughts from Abroad*, *Home Thoughts From the Sea*, *Incident of the French Camp*, *the Boy and the Angel*, *One Word More*, *Herve Riel*, *Pheidippides*.

(3) English Literature. One unit. A good knowledge of the leading facts in the history of English Literature, as given in Scudder's *English Literature*, Johnson's *History of English and American Literature* or the Introductions by Pancoast, Painter, Halleck, Simonds, Moody and Lovett, or Newcomer together with the reading of representative works of literature. This may be offered in lieu of subject (2).

## (B) THE HISTORY GROUP

(4) Civil Government. One-half unit. A good knowledge of the origin, principles, forms and powers of the national, state, and local governments is expected. Fiske's Civil Government, with a special study of the state from which the student comes, may serve to indicate the amount and kind of knowledge sought.

(5) United States History. One-half unit. A good knowledge of the main facts and features of American history, especially of the period since 1750, is expected. Johnson's High School History of the United States, or McLaughlin's History of the American Nation, or Montgomery's Student's American History will serve to show the kind and amount of work sought. No credit upon certificate will be accorded in this subject for work done below the ninth grade.

(6) General History. One unit, or one-half unit. Adam's European History, Munro and Whitcomb's Mediæval and Modern History, or an equivalent.

(7) Greek and Roman History. One-half unit or one unit. Botsford's Ancient History for Beginners, West's Ancient World, Wolfson's Essentials in Ancient History, or equivalents.

(8) English History. One-half unit. Andrew's History of England, Cheyney's Short History of England, or equivalent.

## (C) THE MATHEMATICS GROUP

(9) Algebra. Taylor's Elements of Algebra or an equivalent. One unit. Special attention should be given to the four fundamental operations (single and system), factoring, highest common factor, lowest common multiple, fractions and fractional equations, involution, evolution, surds, complex quantities, quadratic equations, solved by factoring, by completing the square and the general formula.

One-half unit. A thorough review of the work above named, irrational equations, simultaneous quadratic equations, higher equations solvable by factoring, ratio, proportion, progressions, theory of exponents, binomial theorem for positive, integral exponents and use of five-place tables of logarithms. It is recommended that this work be taken in the last year of the high school course.

(10) Geometry. Venable, White, Wells, Wentworth, Beman and Smith, or an equivalent. One unit. Plane geometry with solution of originals. One-half unit. Solid and spherical geometry, with solution of originals given in the text-books named above.

11. Plane Trigonometry. One-half unit. Lyman and Goddard's Plane Trigonometry.

## (D) THE SCIENCE GROUP

(12) Physics. One unit. Carhart and Chute's Elements, Gage's Elements, Avery's Elements. Laboratory training, to accompany the work of the text-book, is strongly recommended.

(13) Physical Geography. One-half unit. Tarr's, Davis' or Gilbert and Brigham's Physical Geography.

(14) Botany. One-half unit. Kellerman's Elementary Botany and Spring Flora, or an equivalent. The course should be divided between spring and fall.

(15) Chemistry. One unit. Remsen's Introduction to the Study of Chemistry, or its equivalent. For laboratory work, McPherson's Laboratory Exercises, arranged to accompany Remsen's Chemistry. The course should consist of at least three recitations and four hours laboratory work weekly. No credit in chemistry will be allowed for preparatory work less thorough than that outlined above.

(16) Physiology. One-half unit. Martin's Human Body (brief course). No credit will be accorded in this subject for work done below the ninth grade.

(17) Zoology. One-half unit. Brigham's, Dana's and Rice's (revised). Kellogg's "Elementary Zoology"; Davenport's "Introduction"; or equivalents, with laboratory or field work.

(18) Geology. One-half unit. Brigham's, Dana and Rice's (revised), Tarr's or LeConte's, may be used as texts. The recitations should be supplemented by study of the geological phenomena and formations found in the vicinity of the school.

(19) Astronomy. One-half unit. Young's Lessons, Comstock's, or equivalent.

## (E) THE FOREIGN LANGUAGE GROUP

(20) Latin. Two units. Pronunciation (Roman method); Grammar (an exact knowledge of the inflections); Cæsar, the first four books of the *De Bello Gallico*. Third unit—Cicero, six orations of Cicero, including *Pro Lege Manilia*. Fourth unit—Vergil, the first six books of the *Aeneid* with Prosody; and Prose Composition, Daniel, or Collar, or Bennett, or Dodge and Tuttle, entire. Latin cannot be continued as a university study unless at least three units are offered for admission.

(21) Greek. Two units. Grammar (Goodwin's preferred) and Prose Composition; or the first 100 lessons in White's Beginner's Greek Book. Reading. The first three books of Xenophon's *Anabasis*. A third unit will be allowed for preparation in the

fourth, fifth and sixth books of the *Anabasis* and three books of Homer's *Iliad*, and a fourth unit for additional reading in Greek.

(22) German. Two units. The pupil should be able to read at sight, and to translate, if called upon, by way of proving his ability to read, a passage of very easy dialogue or narrative prose, help being given upon unusual words and constructions; to put into German short English sentences taken from the language of everyday life or based upon the text given for translation, and to answer questions upon the rudiments of grammar as defined below. During the first year the work should comprise: (1) Careful drill upon pronunciation; (2) the memorizing and frequent repetition of easy colloquial sentences; (3) drill upon the rudiments of grammar, that is, upon the inflection of the articles of, such nouns as belong to the language of every-day life, of adjectives, pronouns, weak verbs, and the more usual strong verbs, also upon the use of the more common prepositions, the simpler uses of the modal auxiliaries, and the elementary rules of syntax and word-order; (4) abundant easy exercises designed not only to fix in mind the forms and principles of grammar, but also to cultivate readiness in the reproduction of natural forms of expression; (5) the reading of from 75 to 100 pages of graduated texts from a reader, with constant practice in translating into German easy variations upon sentences and in the reproduction from memory of sentences previously read. During the second year work should comprise: (1) The reading of from 150 to 200 pages of literature in the form of easy stories and plays; (2) accompanying practice, as before, in the translation into German of easy variations upon the matter read, and also in the off-hand reproduction, sometimes orally and sometimes in writing, of the substance of short and easy selected passages; (3) continued drill upon the rudiments of the grammar, directed to the ends of enabling the pupil, first, to use his knowledge with facility in the formation of sentences, and, secondly, to state his knowledge correctly in the technical language of grammar.

Four units. The applicant must offer, in addition to the above, two additional years of instruction in German, including a review of the essentials of grammar. The rapid reading of at least 200 pages of prose; for example, the following Heyse's *L'Arrabbiata*, Riehl's *Der Fluch der Schoenheit*, Hauff's *Lichtenstein*. The outlines of German literature should be mastered. In connection with this about 200 pages of German ballads and lyrics should be read. Some book like v. Klenze's *Deutsche Gedichte* might be used. A considerable portion of the prose and poetry should be read extemporaneously. About 50 pages in some prose composition should be translated. Text-books suggested are: v. Jagemann's, Poll's or Harris' *Prose Composition*. The work in composition should be carried on as far as possible in German.

(23) French. Two units. Applicants should be able to pronounce French accurately, to read at sight easy French prose, to

put into French simple English sentences taken from the language of every-day life or based upon a portion of the French text read, and to answer questions on the rudiments of the grammar as defined below. During the first year the work should comprise: (1) Careful drill in pronunciation; (2) the rudiments of grammar, including the inflection of the regular and the more common irregular verbs, the plural of nouns, the inflection of adjectives, participles and pronouns; the use of personal pronouns, common adverbs, prepositions and conjunctions; the order of words in the sentence, and the elementary rules of syntax; (3) abundant easy exercises, designed not only to fix in the memory the forms and principles of grammar, but also to cultivate readiness in the reproduction of natural forms of expression; (4) the reading of from 100 to 175 duodecimo pages of graduated texts, with constant practice in translating into French easy variations of the sentences read (the teacher giving the English), and in reproducing from memory sentences previously read; (5) writing French from dictation. During the second year the work should comprise: (1) The reading of from 250 to 400 pages of easy modern (nineteenth century) prose in the form of stories, plays, or historical or biographical sketches (2) constant practice, as in the previous year, in translating into French easy variations upon the texts read; (3) frequent abstracts, sometimes oral and sometimes written, of portions of the text already read; (4) writing French from dictation; (5) continued drill upon the rudiments of grammar, with constant application in the construction of sentences; (6) mastery of the forms and use of pronouns, pronominal adjectives, of all but the rare irregular verb forms, and of the simpler uses of the conditional and subjunctive.

Four units. In addition to the above, the applicant should be able to read at sight, with the help of a vocabulary of special or technical expressions, difficult French not earlier than that of the seventeenth century; to write in French a short essay on some simple subject connected with the words read; to put into French a passage of easy English prose and to carry on a simple conversation in French.

(24) Spanish. Two units. Applicants should be able to pronounce Spanish accurately, to read at sight easy Spanish prose, to put into Spanish simple English sentences taken from the language of every-day life or based upon a portion of the Spanish text read, and to answer questions on the essentials of the grammar. The first year should be spent mainly on the grammar with easy reading and oral practice; the second devoted to reading good modern Spanish, with grammatical analysis and exercises in writing. The texts read should be chiefly narrative and conversational prose, including one or more prose dramas of the present age.

Four units. In addition to the above, the applicant should be able to read at sight, with the help of a vocabulary of special or

technical expressions, difficult Spanish, whether prose or poetry; to write in Spanish a short essay on some simple subject connected with the works read, which shall show a thorough knowledge of syntax; to put into Spanish a passage of easy English prose, and to carry on a simple conversation in Spanish.

### ADMISSION TO SPECIAL STUDIES

Students who desire to pursue special lines of work and do not desire to become candidates for degrees, will be admitted on the following conditions:

1. The regular entrance requirements must be satisfied.
2. But applicants who are not less than twenty-one years of age after obtaining credit for the common English branches and for such other subjects as may be necessary to qualify them for the classes that they wish to enter, may, on the presentation of satisfactory reasons, be admitted to any class in the college; provided, that if any student who has been admitted on these conditions afterwards becomes a candidate for a degree, he shall pass the omitted entrance examinations at least twelve months before the degree is conferred.
3. On entering the college, students desiring to pursue special work are required to lay before the Executive Committee, for approval or modification, a written statement of the end they have in view, the studies proposed for the attainment of that end, and the probable period of attendance. Such students will be held as strictly to their accepted schemes of work as are the regular undergraduates to their course of study.
4. Permission to enter as special undergraduates will be refused to all who fail to give satisfactory evidence of definiteness of purpose, and will be withdrawn whenever the conditions on which it was granted cease to exist.

### ADMISSION TO GRADUATE WORK

A special bulletin devoted exclusively to the Graduate School may be obtained on application to the Secretary University Faculty.

## REQUIREMENTS FOR GRADUATION

## UNDERGRADUATE COURSES OF STUDY

The work of the college of Arts, Philosophy, and Science is organized on the group-elective system. Several of the groups correspond in their chief studies and leading aims to the "courses" \* formerly offered, but with much greater flexibility and much freer opportunities for election. Many other "courses" having equally specific aims are also provided in the groups. The groups, so far as at present arranged, number twelve. This number will be increased as reasonable demand may arise for new groups. The characteristic features of each group may be judged from its name which is made up of the names of the chief studies of the group. The groups at present recommended are given on pages 24 to 26.

About one-third of every student's curriculum is prescribed. Each student is required to lay sufficiently broad foundations, during the first two years, in English, in two other languages to be chosen by himself, in mathematics and one science, or in two sciences to be chosen by himself, and in history, economics, English, or philosophy. The remaining two-thirds of each student's work is elective; but in order to insure substantial results in the studies thus freely chosen, the student is required to continue two of his first-year studies (any two) through the second year, one of his second-year studies (any one) through the third year, and one of his third-year studies (any one) through the fourth year. In order to guard against the danger of too narrow or too wide a range of work, a maximum and a minimum number of departments is fixed in which the student is allowed to work during any one year. In the first and second years the number of departments thus fixed is four or five; in the third and fourth years the number is three or four.

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\*Arts or Classical, Latin Philosophy, Modern Language Philosophy, English Philosophy, General Science, Commerce and Administration, Education, Preparatory to Law, Preparatory to Medicine, Preparatory to Journalism.

## SUMMARY OF REQUIREMENTS

On satisfactory completion of 180 term hours under the restrictions prescribed below, the student will be recommended for the Degree of Bachelor of Arts.

The 180 term hours must include the following, amounting to 57 term hours:

- (a) English 1. (2-2-2) 6 term hours.
- (b) Two of the following languages: (8-8-8) 24 term hours.  
Greek 1 or 7, 8, 9; Latin 1, 2, 3;  
French 1 or 2; German 1 or 4; Spanish 1 or 2.
- (c) Mathematics 31, 32, 33, and 24. (6-6-6) 18 term hours or  
Two of the following: (6-6-6) 18 term hours.  
Mathematics 21, 22, 23; Physics 11 or 2;  
Chemistry 1; Botany 21, 22, 23; Zoology 1.  
Geology 17; Physiology 1.
- (d) One of the following: (3-3-3) 9 term hours.  
European History 1 or 14; American History 1;  
Political Science 1; Economics 30, 31, and 32;  
Psychology 1, and Philosophy 101 or 103; English  
7 or 8.

For the remaining 123 term hours required for graduation the student may elect from any courses announced in this college (see page 28, and following) for which he is qualified.

## FIRST YEAR

- (a) Fifteen or sixteen hours each term, chosen from the prescribed work indicated above, including English 1.
- (b) Cadet Service (men); Hygiene and Physical Training (women); required throughout the first year.

## SECOND YEAR

- (a) Fifteen hours each term. This must include all the prescribed work not done in the first year; the other work of the second year to be in three or four departments of which at least two shall be departments in which the student has worked during the first year.

(b) Cadet Service (men); Hygiene and Physical Training (women); required throughout the second year.

#### THIRD YEAR

Fifteen hours each term in three or four departments, at least one to be a department in which the student has worked during the second year.

#### FOURTH YEAR

Fifteen hours each term in three or four departments, at least one to be a department in which the student has worked during the third year.

#### EXTRA HOURS

A student who has postponed a study in group (b) from the first to the second year, may take sixteen hours in the second year, and by the permission of the Executive Committee a student who has shown exceptional proficiency may be allowed to undertake from one to three extra hours. No extra hours will be granted to a first-year student, or to any student with conditions outstanding.

#### RULE GOVERNING ELECTIONS

Each student enrolled in the College of Arts, Philosophy, and Science must file at the Registrar's office not later than June 1st of each year a complete statement of the courses he wishes to enter the following year. Blanks for this purpose may be obtained of the Registrar.

#### STUDENT ADVISERS

The Faculty of Arts, Philosophy, and Science has provided a system of advisers, the chief objects of which are: (1) to assist the undergraduate in choosing studies that will result in a well-rounded course and will achieve most economically the purpose which the student has in view in his course; (2) to promote closer personal relations between students and instructors and thus to aid the student, so far as

possible, in all matters connected with his university life. During his first term of residence each student is assigned by the Executive Committee to a member of the teaching force to whom he is cordially invited to resort for counsel as often as the need arises. Each student is required to secure the signature of his adviser to his election-card in June of each year, and to petitions, at any time during the year, for a change in work or for increase or diminution of work.

### FIRST YEAR OPTIONS

In order to meet the requirements for graduation, the first-year student must arrange his work on one of the following plans:

I. English; two languages; two sciences, or mathematics and one science, or mathematics alone; deferring until the second year the selection from group (d), above.

II. English; two languages; mathematics or science; one subject from group (d); deferring until the second year a second subject from group (c), above.

III. English; one language; two sciences, or mathematics and one science or mathematics alone; one subject from group (d); deferring until the second year the second language from group (b), above.

In order to assist the student in his choice of work for the first two years, more specific directions are given below in connection with various natural groupings of studies. *These groups are not mandatory.* The student may make other combinations than those suggested, provided his selection of studies fulfills one of the three options given above. In the second year many other combinations are possible. The time schedule, however, is arranged primarily to fit the combinations recommended. The days and hours at which each study is taught may be found by looking up that study on page 28 (et seq.) of this Bulletin. The title of a group indicates the chief studies of that group.

## STUDY GROUPS

1. CLASSICAL. First year: Greek 1 or 7, 8, 9; Latin 1, 2, 3; English 1; either 6 hours in (c) or 3 hours in (c) and 3 hours in (d). Second year: Greek 7, 8, 9 or 10, 11, 12; Latin 4, 5, 6; begin or continue a modern language, a science and a study in Economics, History, Political Science or Sociology. Before choosing work in (c) or (d), read groups 4 to 12.

2. LATIN, MODERN LANGUAGE. First year: Latin 1, 2, 3; French 1 or 2, or German 1 or 4; English 1; either 6 hours in (c) or 3 hours in (c) and 3 hours in (d). Second year: Latin 4, 5, 6; French or German; English; begin or continue a science and a study in Economics, History, Political Science or Sociology. Before choosing work in (c) or (d), read groups 4 to 12.

3. MODERN LANGUAGE. First year: Begin or continue French and German. (*Not more than one new language should be begun in the first year*). English 1; either 6 hours in (c) or 3 hours in (c) and 3 hours in (d). Second year: Continue French and German; begin or continue a science and a study in Economics, History, Political Science or Sociology; add English 7 or 8. Before choosing work in (c) or (d), read groups 4 to 12.

4. GENERAL SCIENCE. First year: French 1 or 2 or German 1 or 4; Chemistry 1; Mathematics 21, 22, 23; English 1; 3 hours in (d). Second year: A second modern language; a study in Economics, English, History, Political Science or Sociology; one of the following: Astronomy, Chemistry, Physics; one of the following: Botany, Geology, Physiology, Zoology; the remaining time in Mathematics or Science. Students intending to specialize in Chemistry should continue that subject the second year of the course. Those who have Geology in view should take Geology 17 and 11, 12, 13 in their second year.

5. MATHEMATICS, PHYSICS, ASTRONOMY. First year: Mathematics 31, 32, 33, 24; French 1 or 2 or German 1 or 4; English 1; 3 hours in (d). Second year: Mathematics 41, 42, 43; Physics 2; Chemistry 1; English and a second

modern language (German or French). Third year: Astronomy 1; Physics 12; and either Astronomy 2 or Physics 3; an additional science (3 hours); English or History 2 or 3 hours; German or French unless each has been studied two full years. Instead of Mathematics 31, 32, 33, 24 in the first year, Chemistry 1 and Mathematics 21, 22, 23 may be chosen, and be followed by Mathematics in the second year.

6. **BIOLOGICAL SCIENCES.** First year: French 1 or 2, or German 1 or 4; Chemistry 1; Botany 21, 22, 23, or Zoology 31; English 1; 3 hours in (d). Second year: Botany; Zoology 31 or 2; Physiology 1; Geology 17 or Mathematics 21, 22, 23 or Physics 11; and a second modern language. Students preparing for medicine should take Zoology 31 in the first year and Zoology 2 and Physiology 1 in the second year.

7. **ECONOMICS, HISTORY.** First year: Include European History 1, 2, 3 or Economics 30, 31, 32; English 1; French 1 or 2, or German 1 or 4; 6 hours in (c). Second year: Include Economics 30, 31, 32, or 33; European History 1, 2, 3, or 14; American History 1 or Political Science 1; 4 hours in (b). In each of the third and fourth years include two courses in Economics and one in History, or two in History and one in Economics.

8. **HISTORY, POLITICAL SCIENCE, ADMINISTRATION.** First year: Include European History 1, 2, 3 or 14, or American History 1; English 1; 6 hours in (b), including French 1 or 2, or German 1 or 4; 3 hours in (c). Second year: Include Political Science 1 and the course in History not taken the first year, and Economics 33; 3 hours in (c). The student who has not a reading command of French or German should continue the modern language of the first year. In each of the third and fourth years include either two courses in History and one in Political Science, or one course in History and two in Political Science; and in one of these years Economics 42, 43.

9. **GENERAL BUSINESS.** First year: Include Economics 30, 31, 32; English 1; Geology 17; Mathematics 21, 22, 23; and one of the following: French 1 or 2, German 1 or 4,

or Spanish 1 or 2. Second year: Include Economics 33; English 7 or 8; Chemistry 1, or Physics 11 or 2; American History 1, or European History 1, 2, 3; begin or continue a modern language.

10. SOCIOLOGY, PHILOSOPHY. First year: Include Economics 30, 31, 32; English 1; Physiology 1; Zoology 31; and French 1 or 2, or German 1 or 4. Second year: Include Economics 33; English 7 or 8; Psychology 1 and Philosophy 101; American History 1 or European History 1, 2, and 3; begin or continue a modern language.

11. PHILOSOPHY, EDUCATION. First year: Follow suggestions in Study Group 1, 2, or 3, except that only three hours be taken in (c), and that Psychology 1 and Philosophy 101 be taken as the subject in (d). Second year: Include Philosophy 103, 104 and Education 1, 2 or 3; begin or continue a modern language, a science in (c) and a study in Economics, History, Political Science or Sociology.

12. GENERAL LITERATURE. First year: Continue both languages offered for admission; English 1; 3 hours in (c); European History 1, 2, 3. Second year: Begin or continue a modern language, a science and two courses in History, including European History 14; English 7 or 8. Take a course in Philosophy throughout the third year.

### ARTS-LAW COURSE

A candidate for the degree of Bachelor of Arts while registered in the College of Arts, Philosophy, and Science may also register in the College of Law as a candidate for the degree of Bachelor of Laws, provided that at the time of seeking such registration in the College of Law (1) he has 135 term hours to his credit in the College of Arts, Philosophy, and Science, including the requisite optional subjects and exclusive of credit hours in Military and Physical Training, and (2) has been a student in the College of Arts, Philosophy, and Science of this University at least one year, and (3) has included (or with the further work in the College of Arts, Philosophy, and Science mentioned in the next paragraph shall complete) sufficient courses to

amount to thirty term hours in one or more of the four subjects: American History, European History, Economics, Political Science, exclusive of elementary courses in these subjects.

A student so registered in the two colleges must, during his first year of double registration complete sufficient further work in the College of Arts, Philosophy, and Science to make his credits in that college aggregate 150 term hours exclusive of any credit hours in Military and Physical Training. When he has done this and has completed in the College of Law the first year of the course for the degree of Bachelor of Laws he will be recommended for the degree of Bachelor of Arts.

Application to enter the combined course must be filed with the Dean of the Arts College before registration day at the beginning of the year in which the student is eligible to the combined work.

No credit in the college of Arts, Philosophy, and Science will be given for work done in the College of Law except as above provided, but regular fourth-year students in the former college may by special permission take a limited amount of the work in the College of Law without credit in the College of Arts, Philosophy and Science.

The work of all students taking studies in the two colleges at the same time is under the jurisdiction of a joint committee, consisting of Professor Denney, Dean of the College of Arts, Philosophy, and Science; Professor Outhwaite, Dean of the College of Law; Professors Knights and Page, and Associate Professor Bruce.

### GRADUATE COURSES

A special bulletin devoted to the work of the Graduate School may be obtained on application to the Executive Office.

## ANNOUNCEMENTS OF DEPARTMENTS

## AMERICAN HISTORY AND POLITICAL SCIENCE

(Office, Room 207 University Hall.)

PROFESSOR KNIGHT, ASSISTANT PROFESSOR TUTTLE, ASSISTANT PROFESSOR SPENCER.

## I. AMERICAN HISTORY.

1. POLITICAL HISTORY OF THE UNITED STATES. Three credit hours. Three terms. *Sec. I: M., W., F., at 8; Sec. II: M., W., F., at 9; Sec. III: M., W., F., at 1.* This must precede all other courses in American History. Assistant Professor TUTTLE, Assistant Professor SPENCER.

2. THE AMERICAN COLONIES, 1600-1763. Three credit hours. Three terms. *M., W., F., at 2.* Should be preceded or accompanied by European History 14. Assistant Professor SPENCER.

4. THE SLAVERY STRUGGLE AND ITS RESULTS, 1800-1900. Three credit hours. Three terms. *M., W., F., at 11.* Given biennially, alternating with course 6. Professor KNIGHT.

\*6. AMERICAN DIPLOMACY, FOREIGN RELATIONS, AND EXPANSION. Three credit hours. Three terms. *M., W., F., at 11.* Given biennially, alternating with course 4. Professor KNIGHT.

7. POLITICAL PARTIES IN THE UNITED STATES, 1789-1900. Two credit hours. Three terms. *Tu., Th., at 9.* Given biennially, alternating with course 12. Assistant Professor SPENCER.

\*8. HISTORICAL MATERIAL AND ITS USE. One credit hour. First and second terms. *W., at 3.* Given biennially. Assistant Professor TUTTLE.

\*9. TOPICAL RESEARCH IN AMERICAN HISTORY. One credit hour. Third term. *W., at 3.* Prerequisite, course 8. Given biennially. Assistant Professor TUTTLE.

10. SEMINARY FOR RESEARCH IN AMERICAN HISTORY AND POLITICAL SCIENCE. Two credit hours. Three terms. *Hours to be arranged.* Prerequisite, two courses in American History, and at least one course in Political Science. Professor KNIGHT.

11. THE TEACHING OF AMERICAN HISTORY. One credit hour. Three terms. *W., at 3.* This course must be taken by all who expect to be recommended for teacher's position in this subject. Professor KNIGHT.

\*12. THE REVOLUTIONARY AND CRITICAL PERIOD, 1763-1789. Two credit hours. Three terms. *Tu., Th., at 9.* Given biennially, alternating with course 7. Assistant Professor SPENCER.

13. GRADUATE COURSES. Courses of investigation arranged at

\*Not given in 1906-1907.

the beginning of each year to meet the needs of individual graduate students. Three to ten hours. Professor KNIGHT.

14. GRADUATE SEMINARY IN AMERICAN HISTORY AND INSTITUTIONS. Three terms. *Hours to be arranged.* Open only to graduate students. Professor KNIGHT.

## II. POLITICAL SCIENCE.

1. MODERN POLITICAL INSTITUTIONS. Three credit hours. Three terms. *M., W., F., at 9.* Prerequisite, American History 1, or European History 1, 2, and 3, or 14, or a substitute acceptable to the department. This course must precede all other courses in Political Science except 4 and 5. Assistant Professor SPENCER.

4. INTERNATIONAL LAW. Two credit hours. First and second terms. *Tu., Th., at 10.* Prerequisite, one course in European History and one course in American History. Professor KNIGHT.

5. HISTORY OF TREATIES AND MODERN DIPLOMACY. Two credit hours. Third term. *Tu., Th., at 10.* Prerequisite, course 4. Professor KNIGHT.

6. THE GOVERNMENT OF COLONIES AND DEPENDENCIES. Two credit hours. Three terms. *Tu., Th., at 11.* Given biennially, alternating with course 8. Professor KNIGHT.

\*8. MUNICIPAL GOVERNMENT AND PROBLEMS. Two credit hours. Three terms. *Tu., Th., at 11.* Given biennially, alternating with course 6. Professor KNIGHT.

9. ORIGIN AND DEVELOPMENT OF THE UNITED STATES CONSTITUTION. Two credit hours. Three terms. *Tu., Th., at 2.* Assistant Professor TUTTLE.

\*10. THEORIES OF GOVERNMENT, SOVEREIGNTY, AND POLITICAL LIBERTY. Two credit hours. Three terms. *M., F., at 10.* Given biennially, alternating with course 12. Assistant Professor SPENCER.

12. COMPARATIVE POLITICS. Two credit hours. Three terms. *M., F., at 10.* Given biennially, alternating with course 10. Assistant Professor SPENCER.

13. AMERICAN ADMINISTRATION. Two credit hours. Three terms. *Tu., Th., at 3.* Given biennially, alternating with course 14. Assistant Professor TUTTLE.

\*14. ADMINISTRATIVE LAW. Two credit hours. Three terms. *Tu., Th., at 3.* Given biennially, alternating with course 13. Assistant Professor TUTTLE.

15. ELEMENTS OF AMERICAN LAW. Two credit hours. Three terms. *Tu., Th., at 9.* Prerequisite, American History, 1, and Political Science 1. Intended primarily for purposes of citizenship, or business, or in connection with other studies in political science for those who desire a general knowledge of the principles of American Law. Assistant Professor TUTTLE.

\*Not given in 1906-1907.

## ANATOMY AND PHYSIOLOGY

(Office, Room 12, Biological Hall.)

PROFESSOR BLEILE, DR. SNIVELY, DR. SEYMOUR AND MR. BEER.

1. HUMAN ANATOMY AND PHYSIOLOGY. Three credit hours. Three terms. *Sec. I, M., W., F., at 8.* Dr. Snively. *Sec. II, M., Th., F., at 10.* Must be preceded or accompanied by a course in chemistry. Professor BLEILE.

3. CHEMICAL PHYSIOLOGY. Three credit hours. Third term. *Th., F., 1 to 4.* Professor BLEILE.

4. HISTOLOGY AND HISTO-CHEMISTRY. Five credit hours. Three terms. *M., Tu., W., 1 to 4.* Professor BLEILE, Dr. SNIVELY, DR. SEYMOUR.

5. MISCROSCOPY AND URINARY ANALYSIS. Two credit hours. Third term. Professor BLEILE and Dr. SNIVELY.

9. PHYSIOLOGICAL LABORATORY. Three credit hours. Three terms. Professor BLEILE.

II. PHYSIOLOGICAL LABORATORY. Five credit hours. Three terms. Professor BLEILE.

## ANCIENT ART

(See Greek Language and Literature.)

## ASTRONOMY

(Office, The Emerson McMillin Observatory.)

PROFESSOR H. C. LORD, MR. J. WARREN SMITH, MR. MAAG.

1. GENERAL ASTRONOMY. Two credit hours. Three terms. *Tu., Th., at 1.* Professor LORD.

2. ASTRONOMY, GEODESY AND LEAST SQUARES. Three credit hours. Three terms. *M., W., F., at 11.* Professor LORD and Mr. MAAG.

3. METEOROLOGY. Two credit hours. Third term. *Tu., F., at 4.* MR. SMITH.

7. ADVANCED ASTRONOMY. Three to five credit hours. Three terms. Prerequisite, calculus. Professor LORD.

## BACTERIOLOGY

(Office, Veterinary Laboratory Building.)

PROFESSOR MORREY.

5. BACTERIOLOGY. Four credit hours. Three terms. Head of department must be consulted before electing. Hours to be arranged. Professor MORREY.

6. ADVANCED BACTERIOLOGY. Five credit hours. Three terms. Hours to be arranged. Professor MORREY.

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\*Not given in 1905-1906.

## BOTANY

(Office, Botanical Hall.)

PROFESSOR KELLERMAN, ASSOCIATE PROFESSOR SCHAFFNER.

## UNDERGRADUATE COURSES.

3. SYSTEMATIC AND PHYSIOLOGICAL BOTANY. Four credit hours. First term. *M., Tu., F., at 10. Laboratory; Th., 10 to 12.* Professor KELLERMAN, Associate Professor SCHAFFNER.

4. MEDICAL BOTANY. Two credit hours. Second term. *M., Tu., 10 to 12.* Associate Professor SCHAFFNER.

9. DENDROLOGY. Two credit hours. First term. *M., W., 10 to 12.* Professor KELLERMAN.

10. DENDROLOGY. Two credit hours. Second term. *Laboratory open daily, 8 to 12.* Professor KELLERMAN.

11. ADVANCED LABORATORY WORK. Credit two to five hours. Three terms. *Laboratory open daily 8 to 12.* Professor KELLERMAN and Associate Professor SCHAFFNER.

16. LABORATORY WORK ON MEDICINAL PLANTS, ETC. Two to five credit hours. *Laboratory open daily 8 to 12.* PROFESSOR KELLERMAN and Associate Professor SCHAFFNER.

17. FOREST BOTANY. Four credit hours. *Lectures, Tu., Th., at 3. Laboratory, Tu., Th., 1 to 3.* Prerequisite, courses 6, 7 and 8, or 21, 22 and 23.

18. NORMAL AND PATHOLOGICAL HISTOLOGY OF WOOD. Four credit hours. *Seminary, Tu., Th., 3. Laboratory, Tu., Th., 1 to 3.*

19. FOREST ECOLOGY AND PATHOLOGY. Four credit hours. *Lectures and Seminary, Tu., Th., at 3. Laboratory, Tu., Th., 1 to 3.*

21. ECOLOGY. Three credit hours. First term. *Tu., Th., at 9. Laboratory, W., 2 to 4.* Associate Professor SCHAFFNER.

22. MORPHOLOGY AND PHYSIOLOGY. Continuation of course 21. Three credit hours. Second term.

23. SYSTEMATIC BOTANY. Continuation of course 22. Three credit hours. Third term.

24. LABORATORY AND FIELD WORK. Two or three credit hours. Three terms. *Daily, 8 to 12.* Professor KELLERMAN and Associate Professor SCHAFFNER.

25. LABORATORY WORK IN HISTOLOGY AND CYTOLOGY. Three to five credit hours. Three terms. *Laboratory open daily.* Prerequisite, courses 6, 7, 8, or 21, 22, 23. Associate Professor SCHAFFNER.

26. ADVANCED LABORATORY WORK IN HISTOLOGY AND MIROTECHNIQUE. Five credit hours. Three terms. *Laboratory open daily.* Prerequisite course 25. Associate Professor SCHAFFNER.

27. LABORATORY AND FIELD WORK IN SYSTEMATIC BOTANY. Three to five credit hours. Three terms. *Laboratory open daily.* Prerequisite, courses 6, 7, 8, or 21, 22, 23. Professor KELLERMAN.

32. MINOR INVESTIGATIONS. One to three credit hours. Three terms. *Daily.* Prerequisite, courses 6, 7, 8, or 21, 22, 23. Professor KELLERMAN and Associate Professor SCHAFFNER.

33. CURRENT LITERATURE. One to three credit hours. Three terms. *Daily.* Prerequisite, courses 6, 7, 8, or 21, 22, 23. Professor KELLERMAN.

#### GRADUATE WORK.

28. RESEARCH WORK IN SYSTEMATIC BOTANY. Five credit hours. Three terms. *Laboratory open daily.* Prerequisite, courses 6, 7, 8, or 21, 22, 23. Professor KELLERMAN.

29. RESEARCH WORK IN MORPHOLOGY AND PHYSIOLOGY. Five or ten credit hours. Three terms. *Laboratory open daily.* Prerequisite, course 26, or equivalent. Associate Professor SCHAFFNER.

30. MONOGRAPHIC WORK. Five or ten credit hours. Three terms, *Daily.* Prerequisite, course 27. Professor KELLERMAN.

31. RESEARCH IN ECOLOGY. Five or ten credit hours. Three terms. *Daily.* Prerequisite, course 25, or equivalent. Associate Professor SCHAFFNER.

#### CHEMISTRY

(Office, Chemical Hall.)

PROFESSOR M'PHERSON, EMERITUS PROFESSOR NORTON, ASSOCIATE PROFESSOR HENDERSON, ASSOCIATE PROFESSOR FOULK, ASSISTANT PROFESSOR EVANS, MISS ANDREWS, MR. VOGT, MR. KNOTE.

1. (a) ELEMENTARY CHEMISTRY. Three credit hours. Three terms. This course consists of one lecture, one quiz., and three hours laboratory work weekly. *Sec. I: Tu., Th., at 1, with laboratory M., 1 to 4; Sec. II: W., at 11 and Th., at 1 with laboratory Tu., 1 to 4.* Associate Professor HENDERSON, Assistant Professor EVANS, Miss ANDREWS, and Department Fellows.

1. (b) ELEMENTARY CHEMISTRY. Three credit hours. Three terms. For students who have chemistry as an entrance credit. This course consists of one lecture, one quiz, and three hours laboratory work weekly. Time same as course 1 (a). Associate Professor HENDERSON, Assistant Professor EVANS, Miss ANDREWS, and Department Fellows.

17. INORGANIC PREPARATIONS. Three to five credit hours. Third term. One lecture and six to twelve hours laboratory work weekly. Lecture hour arranged with instructor; laboratory open afternoons. Associate Professor HENDERSON.

21. ADVANCED GENERAL CHEMISTRY. Two credit hours. Three terms. Two lectures weekly. Prerequisite, course 1. *Tu., Th., at 9.* Associate Professor HENDERSON.

37. QUALITATIVE ANALYSIS. Three to five credit hours. First term. One lecture and four to twelve hours laboratory work

weekly. Prerequisite, course 1. Course 21 should accompany it. *Lecture W., at 11. Laboratory open afternoons.* Associate Professor FOULK.

38. QUANTITATIVE ANALYSIS. Three to five credit hours. Second and third terms. One lecture and four to twelve hours laboratory work weekly. Prerequisite, course 37. Course 40 should accompany it. *Lecture W., at 11. Laboratory open afternoons.* Associate Professor FOULK.

39. QUANTITATIVE ANALYSIS. Three to five credit hours. First and second terms. One lecture and four to twelve hours of laboratory work weekly. Prerequisite, course 38. Lecture hours arranged with instructor. *Laboratory open afternoons.* Students electing this course will take course 17 the third term. Associate Professor FOULK.

40. CHEMICAL PROBLEMS. One credit hour. Second and third terms. One recitation weekly. *Th., at 11.* Associate Professor FOULK.

8. ORGANIC CHEMISTRY. Five credit hours. First term. This course consists of two lectures and six hours laboratory work weekly. Unless special permission is given by the instructor, all students electing this course must have had course 38 or its equivalent. *Lecture Tu., Th., at 8. Laboratory open afternoons.* Professor MCPHERSON.

9. ORGANIC CHEMISTRY. Five credit hours. Second and third terms. Continuation of course 8. *Lecture Tu., Th., at 8. Laboratory open afternoons.* Professor MCPHERSON.

35. RARE ELEMENTS. Three credit hours. First term. Three lectures weekly. Prerequisite, courses 21 and 38. *M., W., F., at 8.* Associate Professor HENDERSON.

30. PHYSICAL CHEMISTRY. Three credit hours. Second and third terms. Three lectures weekly. Prerequisite, courses 21 and 38. *M., W., F., at 8.* Associate Professor HENDERSON.

41. PHYSICAL CHEMISTRY. Three to five credit hours. Three terms. Nine to fifteen hours laboratory work weekly. Prerequisite, course 30, but students taking course 30 may take up the laboratory work at the beginning of the second term, and carry it along with course 30. *Laboratory open afternoons.* Associate Professor HENDERSON.

32. INDUSTRIAL CHEMISTRY. Four credit hours. First and second terms. Two lectures and four hours laboratory work weekly. Prerequisite, courses 9, 21 and 38, or their equivalent. *Lecture Tu., Th., at 8. Laboratory W., Th., 1 to 3.*

15. SANITARY ANALYSIS OF WATER. Four credit hours. Third term. Two lectures and four laboratory hours weekly. Prerequisite, course 38, or its equivalent. *Lecture Tu., Th., at 10. Laboratory open afternoons.* Associate Professor FOULK.

25. HISTORICAL CHEMISTRY. Three credit hours. Second

term. Three lectures weekly. Prerequisite, course 21. Lecture hours arranged with instructor. Professor NORTON.

26. CHEMICAL SEMINARY. One credit hour. Three terms. Instructors and advanced students meet once each week for discussion of special topics. *M., at 4.*

27. (a) ADVANCED ORGANIC CHEMISTRY. Three to five credit hours. Three terms. Nine to fifteen hours of library and laboratory work weekly. Prerequisite, course 9. Time arranged with instructor. Professor McPHERSON.

27. (b) ADVANCED INORGANIC CHEMISTRY. Three to five credit hours. Three terms. Nine to fifteen hours library and laboratory work weekly. Students expecting to enter this course must obtain permission from the instructor. Time arranged with the instructor. Associate Professor HENDERSON.

27. (c) ADVANCED ANALYTICAL CHEMISTRY. Three to five credit hours. Three terms. Nine to fifteen hours library and laboratory work weekly. Prerequisite, course 39 or its equivalent. Time arranged with instructor. Associate Professor FOULK.

28. ORGANIC CHEMISTRY. Two credit hours. Third term. Two lectures weekly. Prerequisite, course 9 and preferably 27 (a). Lecture hours arranged with instructor. Professor McPHERSON.

29. RESEARCH WORK. Five to ten credit hours. Three terms. Fifteen to thirty hours library and laboratory work weekly. Students cannot enter this course without first obtaining permission from the instructor. Professor McPHERSON, Associate Professor HENDERSON, Associate Professor FOULK.

36. THE TEACHING OF CHEMISTRY. Two credit hours. Third term. Two lectures weekly. *Tu., Th., at 9.* Professor McPHERSON.

### ECONOMICS AND SOCIOLOGY.

(Office, Room 211, University Hall.)

PROFESSOR HAGERTY, PRESIDENT THOMPSON, ASSOCIATE PROFESSOR HAMMOND AND ASSISTANT PROFESSOR MCKENZIE.

Students who plan to do considerable work in Economics and Sociology should take courses 30, 31 and 32 as introductory to all other courses, and should take at the same time Geology 17. Those intending to do but one year's work in Economics and Sociology should take course 33.

#### I. ECONOMICS.

30. INDUSTRIAL AND SOCIAL HISTORY OF ENGLAND. Three credit hours. First term. A general view of the evolution of society; the influence of the invasions on England; the rise and development of the manorial and gild systems; the formation and influence of trading companies; the labor and poor laws; the devel-

opment of capitalistic enterprises; and the economic and social legislation especially of the 19th century. Text-book, lectures, and assigned readings. *Sec. I: M., W., F., at 8; Sec. II: M., W., F., at 9; Sec. III: M., W., F., at 2.* Assistant Professor MCKENZIE.

31. INDUSTRIAL AND SOCIAL HISTORY OF THE UNITED STATES. Three credit hours. Second term. A general view of the industrial and social conditions in the colonies; the westward expansion and settlement, and the industrial and social problems involved. The national land policy and the gradual development of internal improvements, etc. Text-book, lectures, and assigned readings. *Sec. I: M., W., F., at 8; Sec. II: M., W., F., at 9; Sec. III: M., W., F., at 2.* Assistant Professor MCKENZIE.

32. COMMERCIAL AND ECONOMIC GEOGRAPHY. Three credit hours. Third term. A brief survey of the industrial resources, transportation systems and commercial conditions of the different countries with the purpose of showing the part which they play in the world's trade. Text-book, lectures, and assigned readings. *Sec. I: M., W., F., at 8; Sec. II: M., W., F., at 9; Sec. III: M., W., F., at 2.* Courses 30, 31 and 32 are open only to first and second year students. Assistant Professor MCKENZIE.

33. ELEMENTS OF POLITICAL ECONOMY. Three credit hours. Three terms. A careful study of the laws of the production, exchange, distribution, and consumption of wealth, combined with an analysis of the industrial actions of men as regards land, labor, capital, money, credit, rent, interest, wages, etc. Text-book, lectures, and individual investigations. Not open to first year students. *Sec. I: M., W., F., at 8; Sec. II: M., W., F., at 9; Sec. III: M., W., F., at 2.* This course should precede all courses except 30, 31 and 32, and Sociology 1, 2, 3 and 4, 5, and 6. Professor HAGERTY and Associate Professor HAMMOND.

34. MONEY AND BANKING. Three credit hours. First term. A study of bi-metallism, convertible and inconvertible money, and the quantity theory of money. An investigation into the principles of banking with special reference to the banking institutions of the United States, a history of banking, and a comparison of the banking institutions of the leading commercial nations. Prerequisite, course 33. *M., W., F., at 2.*

35. BANKING PRACTICE. Three credit hours. Second term. The bank as a business institution, its form of organization, its system and methods; the methods of different classes of banks and of different banking institutions compared. Prerequisite, course 34. *M., W., F., at 2.*

36. THE MONEY MARKET. Three credit hours. Third term. This course will be devoted to an analysis of the fluctuations of the money market. It will deal with foreign exchange, speculation on the stock and produce markets, the money supply, the work of the bill broker, the concentration of business in the London and New York markets, etc. Prerequisite, course 35. *M., W., F., at 2.*

37. INDUSTRIAL ORGANIZATION AND MANAGEMENT. Three credit hours. First term. The various forms of business undertakings and the methods by which capital and labor are secured and organized for productive purposes are here considered. Especial attention is given to industrial corporations their internal organization, securities, receiverships and reorganization. Prerequisite, course 33. *M., W., F., at 9.* Associate Professor HAMMOND.

38. INDUSTRIAL CONCENTRATION AND MONOPOLY. Three credit hours. Second term. A discussion of the forces and tendencies which lead to large scale production. The causes and forms of industrial consolidations. Trust promotion, financing, and management. The tendency toward monopoly and monopolistic methods. The relation of the state to the monopoly problem and proposed methods of public control of monopolies. Prerequisite, course 37. *M., W., F., at 9.* Associate Professor HAMMOND.

39. LABOR ORGANIZATIONS AND EMPLOYERS' ASSOCIATIONS. Three credit hours. Third term. A study of the methods by which laborers and employers organize for the purpose of endeavoring to control the labor market. The methods of collective bargaining and the establishment of trade agreements. Prerequisite, course 38. *M., W. F., at 9.* Associate Professor HAMMOND.

\*40. THE DISTRIBUTIVE AND REGULATIVE INDUSTRIES. Three credit hours. First and second terms. A study of the various methods of marketing goods, and the functions of the various distributors, the manufacturers, manufacturers' agents, brokers, jobbers, traveling salesmen, retailers, etc. Evolution of distributive institutions, study of advertising, of boards of trade, chambers of commerce, stock and produce markets, etc. Prerequisite, course 33. Professor HAGERTY.

\*41. COMMERCIAL CREDIT. Three credit hours. Third term. A study of the organization of houses for the giving of credit, the history and functions of mercantile agencies, the work of credit men's associations, the history of bankruptcy legislation, etc., also a study of the various instruments of credit, notes, drafts, bills of exchange, bills of lading, etc. Prerequisite, course 40. Professor HAGERTY.

42. PUBLIC FINANCE AND TAXATION. Two credit hours. First and second terms. This course aims to make the student acquainted with the theory of public revenue and expenditure; and with the leading systems of financial administration throughout the world. Text-book, Adams' Finance, and lectures. *Tu., Th., at 2.* Must be preceded by course 33. President THOMPSON.

43. FINANCIAL HISTORY OF THE UNITED STATES. Two credit hours. Third term. Must be preceded by course 42. *Tu., Th., at 2.* President THOMPSON.

44. TRANSPORTATION. Two credit hours. Three terms. The public character of the transportation industry. The history of transportation. Growth of the railway system and the principal lines of communication. The relation of the railroad to other means of transportation. The organization and management of railroads. Railway capitalization. Railway rates, pools, mergers and consolidations, railway commissions and public control. Government ownership of railroads. Especial attention is given to the railway problem in the United States. Prerequisite, course 33. *Tu., Th., at 8.* Associate Professor HAMMOND.

48. ACCOUNTING AND STATISTICS. Two credit hours. Three terms. A general introductory course to meet the needs of those who will be engaged in general business and social enterprises. The first part of the course will deal with the theory of accounts and furnish practice in the formation and analysis of business statements. The second part of the course will deal with the methods of statistical investigation and presentation, and the use of statistics in economic, social and commercial enterprises. Prerequisite, course 33. *Tu., Th., at 9.*

## II. SOCIOLOGY.

These courses are not open to first year students. It is recommended that courses 1, 2 and 3 be preceded by 30, 31, 32, or 33, or Philosophy 18 or Zoology 1. Courses 4, 5 and 6 should be preceded by 1, 2 and 3.

1. ELEMENTS OF SOCIOLOGY. Three credit hours. First term. A study of the fundamental principles of sociology. Text-book and lectures. *M., W., F., at 1.* Assistant Professor MCKENZIE.

2. HISTORY OF THE FAMILY. Three credit hours. Second term. A study of the matrimonial institutions of primitive society and the evolution of the family through the Greek, Roman, Mediaeval and Modern periods. Must be preceded by 1. *M., W., F., at 1.* Assistant Professor MCKENZIE.

3. PRIMITIVE SOCIETY. (Formerly course 12.) Three credit hours. Third term. This course must be preceded by 2. *M., W., F., at 1.* Assistant Professor MCKENZIE.

4. DEPENDENTS AND DEFECTIVES. Three credit hours. First term. This course embraces: (1) A study of poverty and the social conditions responsible for dependency; (2) The slum conditions of the leading American cities and the leading cities in Ohio; (3) Outside and inside relief both public and private; (4) The benevolent and educational institutions of Ohio caring for the dependents and defectives. Courses 4, 5 and 6 should be preceded by Sociology 1, 2 and 3. *Tu., Th., F., at 10.* Professor HAGERTY.

5. CRIMINOLOGY. Three credit hours. Second term. A study of criminality, the causes of crime, means of diminishing crime,

prison management and prison reform. *Tu., Th., F., at 10.* Prerequisite, 4. Professor HAGERTY.

6. ORGANIZED PHILANTHROPY. Three credit hours. Third term. A study of the various institutions or agencies organized to prevent dependency and crime, such as charity associations, social settlements, the various church agencies, etc. Prerequisite, 5. *Tu., Th., F., at 10.* Professor HAGERTY.

Columbus is excellently situated for the pursuit of work indicated in courses 4, 5, and 6. Trips will be made to various penal, benevolent, and reformatory institutions of the city. Practical workers in different fields will lecture to the classes from time to time. These courses are intended to prepare students to do settlement, charity, and general philanthropic work.

8. THE INDIAN. A study of primitive man. Three credit hours. First term. *M., W., F., at 9.* Assistant Professor MCKENZIE.

9. THE NEGRO. A study of tropic man. Three credit hours. Second term. *M., W., F., at 9.* Assistant Professor MCKENZIE.

10. THE IMMIGRANT. Three credit hours. Third term. A study of race migration, race differences, and race assimilation. *M., W., F., 9.* Assistant Professor MCKENZIE.

Studies are made in courses 8, 9 and 10 in Race Psychology. An attempt will be made through concrete examples to discover the forces which lie back of the race problems confronting the American people.

7. SEMINARY IN SOCIOLOGY. Two credit hours. Three terms. Open to graduates and advanced undergraduates. This course is recommended to students who have had one or two years' work in Sociology. The work for the ensuing year is outlined as follows: Each alternate meeting will be devoted to the investigation of some social problems of the city of Columbus. At the other meetings sociological literature will be discussed. Hours to be arranged. Must be preceded by 1, 2 and 3. Professor HAGERTY and Assistant Professor MCKENZIE.

#### GRADUATE COURSES.

45. SEMINARY IN ECONOMICS. Two credit hours. Three terms. Open to graduates and advanced undergraduates. This course is recommended to students who have had two or three years' work in Economics. Those contemplating taking the course should arrange for this work in advance and receive their assignments. Hours arranged. Associate Professor HAMMOND.

46. RESEARCH WORK. Two credit hours. Three terms. In this work, as far as possible, only original sources are used, and investigations made from real life. The aim is to set before each student the accomplishment of a task of extending in some degree, however slight, the boundaries of economic and sociological knowl-

edge. Meetings are arranged with the instructor throughout the year. Hours to be arranged.

47. ADVANCED ECONOMICS. One to ten credit hours. Three terms. Open to undergraduates only on permission of the head of the department. The aim of these courses is to offer the students an opportunity to specialize to any degree he may desire along the various lines within the field of the department. Elections will naturally fall under the following heads: (a) Theoretical problems. (b) Historical problems. (c) Practical problems. (d) Finance. (e) Commerce. (f) Sociology, (theoretical or practical). (g) Statistics. Hours arranged with the students individually.

49. THEORIES OF TAXATION. Two credit hours. Three terms. This course will be devoted to an intensive study of recent works on the theory of taxation. The object will be to show the origin and historical development of the various theories, their applicability to present conditions and their relation to social and political reforms. While intended primarily for graduates, advanced undergraduates may be admitted to this course by permission of the instructor. Hours to be arranged. Associate Professor HAMMOND.

50. DISTRIBUTION OF WEALTH. Three credit hours. Three terms. In this course will be discussed the fundamental institutions upon which wealth distribution is based and the views on the distribution of wealth of the various schools of economic thought. The theories of value, rent, interest, wages and profits will be considered historically. This course is intended for graduates, but advanced undergraduates may be admitted by permission of the instructor. *M., W., F., at 11.* Professor HAGERTY.

## EDUCATION

(Office, Room 407, University Hall.)

PROFESSOR MAJOR, ASSISTANT PROFESSOR HAINES.

1. EDUCATIONAL PSYCHOLOGY. Three credit hours. Three terms. *M., W., F., at 11.* Prerequisite, one year of college work. The work in this course will be based upon James' *Talks on Psychology* and Thorndike's *Principles of Teaching*. Professor MAJOR.

2. INTRODUCTION TO EDUCATIONAL THEORY. Two credit hours. Three terms. *Tu., Th., at 10.* Professor MAJOR.

3. HISTORY OF EDUCATION. Three credit hours. Three terms. *M., W., F., at 9.* Monroe's *Text-book in the History of Education* will be used in this course. Professor MAJOR.

4. MENTAL DEVELOPMENT. Two credit hours. Three terms. *M., F., at 10.* This course considers the development of the individual human mind, and will include a study of typical definitions of mental development, a discussion of human instincts, the theory of

nascent periods, the development of intellectual processes. Professor MAJOR.

5. SCIENCE OF EDUCATION. Three credit hours. Three terms. *M., W., F., at 11.* Prerequisite, Philosophy 18, 19, and Education 1, 2 or 3. Assistant Professor HAINES.

\*6. MODERN EDUCATIONAL SYSTEMS. Two credit hours. Three terms. *Tu., Th., at 2.* Assistant Professor HAINES.

7. HIGH SCHOOL ADMINISTRATION. Two credit hours. Three terms. *Tu., Th., at 11.* Prerequisite, two years of college work. This course will be concerned with the problems of the public high school; curriculum, organization, and administration. Professor MAJOR.

8. EDUCATIONAL CLASSICS. Two credit hours. Three terms. *M., W., at 2.* Assistant Professor HAINES.

9. SEMINARY IN EDUCATION. Two credit hours. Three terms. Hours arranged. Prerequisite, three years of college work. Professor MAJOR.

10. ADMINISTRATION OF PUBLIC EDUCATION. Two credit hours. Three terms. *M., F., at 3.* Professor MAJOR.

## ENGLISH

(Office, Room 116, University Hall.)

PROFESSOR DENNEY, PROFESSOR BARROWS, ASSOCIATE PROFESSOR TAYLOR, ASSISTANT PROFESSOR GRAVES, ASSISTANT PROFESSOR MCKNIGHT, ASSISTANT PROFESSOR DUNCAN, MR. MCKINNEY, MISS RICHARDSON, MR. BROWN.

### UNDERGRADUATE COURSES.

1. PARAGRAPH WRITING AND ANALYSIS OF PROSE. Two credit hours. Three terms. *Tu., Th., or W., F., 8, Tu., Th., 9; Tu., Th., 10; Tu., Th., 1.* Assistant Professor GRAVES, Assistant Professor MCKNIGHT, Assistant Professor DUNCAN, Mr. MCKINNEY, Mr BROWN, Miss RICHARDSON.

2. EXPOSITORY WRITING. Two credit hours. First term. *Tu., Th., 9, 10, 11, M., F., 10.* Prerequisite, course 1. Professor DENNEY, Assistant Professor DUNCAN.

3. BRIEF MAKING AND ARGUMENTATION. Two credit hours. Second and third terms. Time same as course 2. Prerequisite, course 1. Professor DENNEY, Assistant Professor DUNCAN.

5. ADVANCED COMPOSITION. Two credit hours. *Second and third terms. Tu., Th., 11.* Prerequisite, courses 1 and 2. Assistant Professor GRAVES.

7. INTRODUCTION TO ENGLISH LITERATURE. Three credit hours.

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\*Not given in 1906-1907.

Three terms. *M., W., F.*, 8 or 9. No prerequisite course. Professor BARROWS.

8. GENERAL SURVEY OF ENGLISH LITERATURE. Three credit hours. Three terms. *M., W., F.*, 3 or 11. No prerequisite course. Associate Professor TAYLOR, Assistant Professor GRAVES.

10. FROM SPENCER TO MILTON. Two credit hours. First term. *Tu., Th., 11.* Prerequisite, course 7 or 8. Associate Professor TAYLOR.

11. FROM DRYDEN TO POPE. Two credit hours. Second term. *Tu., Th., 11.* Prerequisite, course 7 or 8. Associate Professor TAYLOR.

12. THE AGE OF JOHNSON. Two credit hours. Third term. *Tu., Th., 11.* Prerequisite, course 7 or 8. Associate Professor TAYLOR.

14. BURKE TO DEQUINCEY. Four credit hours. First term. *M., Tu., Th., F., 10.* Prerequisite, courses 2 and 7 or 8. Professor DENNEY.

15. CARLYLE AND RUSKIN. Four credit hours. Second term. *M., Tu., Th., F., 10.* Prerequisite, courses 2 and 7 or 8. Professor DENNEY.

16. ARNOLD AND NEWMAN. Four credit hours. Third term. *M., Tu., Th., F., 10.* Prerequisite, courses 2 and 7 or 8. Professor DENNEY.

18. SHELLEY AND WORDSWORTH. Three credit hours. First term. *M., W., F., 9.* Prerequisite, course 7 or 8. Associate Professor TAYLOR.

19. TENNYSON. Three credit hours. Second term. *M., W., F., 9.* Prerequisite, course 7 or 8. Associate Professor TAYLOR.

20. BROWNING. Three credit hours. Third term. *M., W., F., 9.* Prerequisite course 7 or 8. Associate Professor TAYLOR.

22. THE ENGLISH BIBLE. The Pentateuch and Earlier Histories. One credit hour. Three terms. Not offered until 1907-8. Professor BARROWS.

23. THE ENGLISH BIBLE. Later Histories, Poetry and Prophecies. One credit hour. Three terms. Not offered until 1908-9. Professor BARROWS.

24. THE ENGLISH BIBLE. The New Testament. One credit hour. Three terms. *Th., at 8.* No prerequisite course. Professor BARROWS.

26. HISTORY OF THE ENGLISH LANGUAGE. Two credit hours. First term. *M., F., 10.* No prerequisite course. Assistant Professor McKNIGHT.

27. ENGLISH WORDS. Two credit hours. Second and third terms. *M., F., 10.* No prerequisite course. Assistant Professor McKNIGHT.

28. OLD ENGLISH. Two credit hours. Three terms. *M., W., 9.* No prerequisite course. Assistant Professor McKNIGHT.

30. PRE-CHAUCERIAN LITERATURE. Three credit hours. First

term. *M., W., F.*, 11. Prerequisite, course 7 or 8. Assistant Professor McKNIGHT.

31. CHAUCER. Three credit hours. Second term. *M., W., F.*, 11. Prerequisite, course 7 or 8. Assistant Professor McKNIGHT.

32. ARTHURIAN STORY. Three credit hours. Third term. *M., W., F.*, 11. Prerequisite, course 7 or 8. Assistant Professor McKNIGHT.

35. SHAKESPEARE. Three credit hours. Three terms. *M., W., F.*, 3. Prerequisite, course 7 or 8. Professor BARROWS.

36. THE DRAMA OTHER THAN SHAKESPEARE. Three credit hours. First and second terms. *M., W., F.*, 2. Prerequisite, course 7 or 8. Professor BARROWS.

37. MILTON. Epic and Prose. Three credit hours. Third term. *M., W., F.*, 2. Prerequisite, course 7 or 8. Professor BARROWS.

38. THE NOVEL: Eighteenth Century. Four credit hours. First term. *M., Tu., Th., F.*, 10. Prerequisite, course 7 or 8. Associate Professor TAYLOR.

39. THE NOVEL: Scott and Jane Austen. Four credit hours. Second term. *M., Tu., Th., F.*, at 10. Prerequisite, course 7 or 8. Associate Professor TAYLOR.

40. THE NOVEL: Nineteenth Century. Four credit hours. Third term. *M., Tu., Th., F.*, 10. Prerequisite, course 7 or 8. Associate Professor TAYLOR.

43. POETICS. Three credit hours. First term. *M., W., F.*, 9. Prerequisite, course 2, 3 or 5, and 7 or 8. Assistant Professor GRAVES.

44. SHORT STORY WRITING. Three credit hours. Second and third terms. *M., W., F.*, 9. Prerequisite, course 2, 3 or 5, and 7 or 8. Assistant Professor GRAVES.

45. AMERICAN LITERATURE. Three credit hours. First term. *M., W., F.*, 11. Prerequisite, course 7 or 8, 18, 19, 20, 38, 39, 40. Associate Professor TAYLOR.

46. CURRENT LITERATURE. Three credit hours. Second and third terms. *M., W., F.*, 11. Prerequisite, course 7 or 8, 18, 19, 20, 38, 39, 40. Associate Professor TAYLOR.

47. AUDITORS' COURSE. The intensive study of selected English classics with study of the authors' lives. Exclusively for those who are or have been engaged in teaching. Auditor's fee, \$1.00 each term. *Tu.*, 4. Professor BARROWS.

48. TEACHERS' COURSE. Two credit hours. Three terms (Not offered until 1907-8.)

49. SEMINARY. Two credit hours. Three terms. *M.*, 4 to 6. Prerequisite, thirty term hours in English. Professor DENNEY.

#### Graduate Courses

61. Theories of Rhetoric. *Tu.*, 3 to 5. Professor DENNEY.

62. Old and Middle English Philology. Assistant Professor McKNIGHT.

63. Literary Problems. Professor BARROWS.  
 64. Comparative Criticism. Associate Professor TAYLOR.

### ENTOMOLOGY

(See Zoology and Entomology.)

### EUROPEAN HISTORY

(Office, Room 204, University Hall.)

PROFESSOR SIEBERT, ASSISTANT PROFESSOR MCNEAL.

1. THE EARLY MIDDLE AGES. Three credit hours. First term. *Sec. I: M., W., F., at 9.* Professor SIEBERT. *Sec. II: M., W., F., at 1.* Assistant Professor McNEAL. *Sec. III: M., W., F., at 2.* Assistant Professor McNEAL.

2. RENAISSANCE. Three credit hours. Second term. *Sec. I: M., W., F., at 9.* Professor SIEBERT. *Sec. II: M., W., F., at 1.* Assistant Professor McNEAL. *Sec. III: M., W., F., at 2.* Assistant Professor McNEAL.

3. MODERN EUROPE. Three credit hours. Third term. *Sec. I: M., W., F., at 9.* Professor SIEBERT. *Sec. II: M., W., F., at 1.* Assistant Professor McNEAL. *Sec. III: M., W., F., at 2.* Assistant Professor McNEAL.

4. POLITICAL AND CONSTITUTIONAL HISTORY OF ENGLAND. Three credit hours. Three terms. *M., W., F., at 11.* Prerequisite, course 14 or courses 1, 2, 3. Professor SIEBERT.

5. POLITICAL AND SOCIAL HISTORY OF GREECE TO THE ROMAN CONQUEST. Two credit hours. First term. *Tu., Th., at 9.* Assistant Professor McNEAL.

6. ROMAN HISTORY AND INSTITUTIONS TO THE END OF THE REPUBLIC. Two credit hours. Second and third terms. *Tu., Th., at 9.* Assistant Professor McNEAL.

7. PERIOD OF THE PROTESTANT REFORMATION. Three credit hours. First term. *M., W., F., at 2.* Prerequisite, course 1, 2, and 3, or course 14. Professor SIEBERT.

8. THE FRENCH REVOLUTION AND NAPOLEONIC PERIODS, 1789-1815. Three credit hours. Second term. *M., W., F., at 2.* Prerequisite, courses 1, 2 and 3, or course 14. Professor SIEBERT.

9. HISTORY OF EUROPE IN THE NINETEENTH CENTURY. Three credit hours. Third term. *M., W., F., at 2.* Prerequisite, courses 1, 2 and 3, or course 14. Professor SIEBERT.

\*10. HISTORY OF EUROPEAN COLONIES. Two credit hours. First and second terms. *Tu., Th., at 10.* Prerequisite, courses 1, 2 and 3, or course 14. Professor SIEBERT.

\*11. THE EASTERN QUESTION. Two credit hours. Third

\*Not given until 1907-1908.

term. *Tu., Th., at 10.* Prerequisite, courses 1, 2 and 3, or equivalent. Professor SIEBERT.

13. TEACHERS' COURSE IN EUROPEAN HISTORY. One credit hour. Three terms. *Time to be arranged.*

14. NARRATIVE HISTORY OF ENGLAND. Three credit hours. Three terms. *M., W., F., at 8.* Assistant Professor McNEAL.

15. HISTORY OF NORTHEASTERN EUROPE. Two credit hours. First and second terms. *Tu., Th., at 9.* Prerequisite, courses 1, 2 and 3, or course 14. Professor SIEBERT.

16. EUROPE AND THE ASIATIC QUESTION. Two credit hours. Third term. *Tu., Th., at 9.* Prerequisite, courses 1, 2 and 3, or course 14. Professor SIEBERT.

21. MODERN EUROPEAN HISTORY. Investigations of Special Topics. One to ten credit hours. Three terms. Open only by permission of instructor. Time to be arranged. Professor SIEBERT.

22. ADVANCED WORK IN MEDLÆVAL EUROPEAN HISTORY. One to ten credit hours. Three terms. Topics may be selected from the following list: (a) Mediaeval Civilization. (b) Feudal Institutions. (c) Period of the Renaissance. (d) Study of Mediaeval Documents. Time to be arranged. Assistant Professor McNEAL.

## FRENCH

(See Romance Languages and Literatures.)

## GEOLOGY

(Office, Orton Hall.)

PROFESSOR PROSSER, PROFESSOR BOWNOCKER, ASSISTANT PROFESSOR HUBBARD.

6. ECONOMIC GEOLOGY. Three credit hours. Second term. *M., W., F., at 11.* Prerequisite, courses 11 and 12. Professor BOWNOCKER.

11. INORGANIC GEOLOGY. Three credit hours. First term. *M., W., F., at 9.* Prerequisite, Chemistry 1. Professor BOWNOCKER.

12. HISTORICAL GEOLOGY. Three credit hours. Second term. *Lectures M., W., F., at 9.* Prerequisite, course 11. Professor PROSSER.

13. FIELD GEOLOGY. Three credit hours. Third term. *Lectures M., at 9. Field trips, Sat. Laboratory open W., at 9.* Prerequisite, courses 11 and 12. Professor PROSSER.

14. PALEONTOLOGY. Two to five credit hours. Three terms. *Laboratory open M., Tu., W., Th., F., 1 to 4.* Prerequisite, courses 11 and 12. Professor PROSSER.

15. AERIAL GEOLOGY. Two to five credit hours. First and third terms. *Field work Sat. Laboratory open M., Tu., W., Th.,*

*F.*, 1 to 4. Prerequisite, courses 11, 12, 13 and 14. Professor PROSSER and Assistant Professor HUBBARD.

16. ADVANCED HISTORICAL GEOLOGY. Three to five credit hours. Three terms. Field work first and third terms and part of the summer. *Time to be arranged. Laboratory open M., Tu., W., Th., F., 1 to 4.* Prerequisite, courses 11, 12, 13 and 14. Professor PROSSER.

17. PHYSIOGRAPHY. Three credit hours. Three terms. Open to Freshmen and Sophomores only. Physiographic features of the earth's surface, the ocean and the atmosphere. Lectures and assigned readings, illustrated with models and lantern views. *Sec. I: M., W., F., at 1.* Occasional field trips on Sat. Professor BOWNOCKER. *Sec. II: Tu., Th., at 10.* Excursions or laboratory *M.*, or *Tu.*, from 1 to 3:30. Occasional all day excursions on Saturday. Assistant Professor HUBBARD.

18. GEOGRAPHIC GEOLOGY. Three credit hours. Hours to be arranged. Prerequisite, course 11 or 17. Professor BOWNOCKER.

19. PETROGRAPHY. Two credit hours. Three terms. *Laboratory open M., Tu., W., Th., F., 1 to 4.* Prerequisite, Chemistry 1. Metallurgy 2, and Geology 11. Professor BOWNOCKER.

20. RESEARCH WORK. Three to five credit hours. Three terms. Prerequisite, preceding courses in inorganic or historical geology. Professor PROSSER, Professor BOWNOCKER, or Assistant Professor HUBBARD.

21. ADVANCED PHYSIOGRAPHY. Three or more credit hours. Three terms. Special students in physiography. Conferences and reports, reviews of literature, directed and independent excursions and laboratory work. *M., 4 to 5 and other hours to be arranged.* Prerequisite, course 17, or courses 11, 12 and 13, or their equivalents. Assistant Professor HUBBARD.

## GERMANIC LANGUAGES AND LITERATURES

(Office, Room 317, University Hall.)

PROFESSOR RHOADES, ASSISTANT PROFESSOR VILES, MR. EISENLOHR,  
MR. BUSEY, MR. BEAL.

1. ELEMENTARY GERMAN. Four credit hours. Three terms. *Sec. I: Tu., W., Th., F., at 9.* *Sec. II: M., Tu., Th., F., at 10.* *Sec. III: M., Tu., Th., F., at 10.* *Sec. IV: M., Tu., Th., F., at 11.* *Sec. V: M., Tu., Th., F., at 11.* *Sec. VI: Tu., W., Th., F., at 2.* *Sec. VII: Tu., W., Th., F., at 3.* During the second and third terms one section will be discontinued and its place taken by a new one beginning the subject again.

2. SCIENCE READING. Four credit hours. Third term. *Sec. I: Tu., W., Th., F., at 8.* *Sec. II: Tu., W., Th., F., at 9.* Prerequisite, course 4 for the first and second terms. Mr. EISENLOHR.

4. INTERMEDIATE GERMAN. Four credit hours. Three terms. *Sec. I: M., Tu., Th., F., at 10.* Assistant Professor VILES. *Sec. II: M., Tu., Th., F., at 11.* Professor RHOADES. *Sec. III: Tu., W., Th., F., at 2.* Dr. THOMAS. *Sec. IV: Tu., W., Th., F., at 8.* Mr. EISENLOHR. *Sec. V: Tu., W., Th., F., at 9.* Mr. EISENLOHR. Sections IV and V will be replaced in the third term by course 2.

9. CLASSICAL DRAMA. Three credit hours. Three terms. *M., W., F., at 2.* Professor RHOADES. Prerequisite, course 4 or equivalent.

\*10. MODERN PROSE AND DRAMA. Three credit hours. Three terms. *M., W., F., at 3.* Dr. THOMAS. Prerequisite, course 4 or equivalent.

11. FAUST. Three credit hours. First and second terms. *M., W., F., at 3.* Prerequisite, course 9 or 10. Must be elected for both terms. Professor RHOADES.

12. PROSE COMPOSITION AND CONVERSATION. Two credit hours. Three terms. *W., F., at 2.* Prerequisite, course 4. Open only by permission and in connection with one of the advanced reading courses. The course is conducted in German. Mr. EISENLOHR.

13. ADVANCED PROSE COMPOSITION. One credit hour. Three terms. *M., at 2.* Prerequisite, course 12. The course is intended for students who are preparing to teach and is conducted in German. Assistant Professor VILES.

14. GOTHIC. Three credit hours. First term. *M., W., F., at 8.* The work is introductory to the historical study of either English or German. Assistant Professor VILES.

15. OLD HIGH GERMAN. Two credit hours. Second and third terms. *M., W., at 8.* This, with course 17, forms a natural sequence to 14. Assistant Professor VILES.

16. MIDDLE HIGH GERMAN. Two credit hours. Three terms. *Tu., Th., at 8.* Assistant Professor VILES.

17. OLD SAXON AND OLD NORSE. One credit hour. Second and third terms. *F., at 8.* The work follows course 14 and should be taken in connection with 15. Assistant Professor VILES.

18. ROMANTIC WRITERS AND HEINE. Three credit hours. Three terms. *M., W., F., at 3.* Dr. THOMAS. Prerequisite, course 4, or equivalent.

\*19. RECENT AND CONTEMPORARY WRITERS. Three credit hours. Three terms. *M., W., F., at 2.* Professor RHOADES. Prerequisite, course 4, or equivalent.

26. SEMINARY. (a) Studies in Classic and Modern Dramatic Literature. Two credit hours. Three terms. *One session Tu., at 4.* The work is continuous throughout the year and must be so elected in order to count for an advanced degree. Seminary (b). Elements of Phonology, Philology and Historical Grammar; study of difficult and disputed points in modern German syntax; methods

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\*Not given until 1907-1908.

of teaching with reports on books of reference, texts, etc. Two credit hours. Three terms. *One session.* Intended for teachers and students preparing to teach; open by permission and hours to be arranged. Professor RHOADES and members of the German department.

28. GERMAN LYRIC POETRY. Two credit hours. Three terms. *Tu., Th., at 2.* The course is continuous, but may be elected for a single term. Prerequisite, course 4. Mr. EISENLOHR.

30. HISTORY OF GERMAN LITERATURE SINCE THE REFORMATION. Three credit hours. Third term. *M., W., F., at 3.* Graduates will present a special study of a single author or movement. Professor RHOADES.

### GREEK LANGUAGE AND LITERATURE.

(Office, Room 307, University Hall.)

PROFESSOR SMITH, ASSOCIATE PROFESSOR HODGMAN, ASSOCIATE  
PROFESSOR ELDEN.

1. ELEMENTARY GREEK. Four credit hours. Three terms. *M., Tu., Th., F., at 11.* Associate Professor ELDEN.

7. XENOPHON: The Memorabilia of Socrates; Exercises in Greek Prose. Four credit hours. First term. *M., T., Th., F., at 11.* Prerequisite, course 1. Professor SMITH.

8. HERODOTUS: Selections; with Studies in Greek History. Four credit hours. Second term. *M., Tu., Th., F., at 11.* Prerequisite, course 7. Professor SMITH.

9. HOMER'S ODYSSEY. Selections from Books I-IX. Four credit hours. Third term. *M., Tu., Th., F., at 11.* Prerequisite, courses 7 and 8. Professor SMITH.

10. LYSIAS: Eight Orations; with Studies in Attic Procedure. Three credit hours. First term. *Tu., Th., F., at 10.* Prerequisite, courses 7 to 9. Professor SMITH.

11. PLATO: Apology, Crito and Phædo. Three credit hours. Second term. *Tu., Th., F., at 10.* Prerequisite, courses 7 to 10. Professor SMITH.

12. HOMER'S ILIAD. Three credit hours. Third term. *Tu., Th., F., at 10.* Prerequisite, courses 7 to 11. Professor SMITH.

13. THUCYDIDES: Book I or Book VII. Three credit hours. First term. *M., W., F., at 3.* Prerequisite, courses 7 to 12. Associate Professor HODGMAN.

14. DEMOSTHENES: Olynthiacs and Philippics. Three credit hours. Second term. *M., W., F., at 3.* Prerequisite, courses 7 to 12. Associate Professor HODGMAN.

15. GREEK LYRIC POETS, OR THEOCRITUS. Three credit hours.

Third term. *M., W., F., at 3.* Prerequisite, courses 7 to 12. Associate Professor HODGMAN.

16. EURIPIDES: Alcestis, with lectures on the Attic drama. Two credit hours. First term. *Tu., Th., at 3.* Prerequisite, courses 7 to 12. Associate Professor HODGMAN.

17. SOPHOCLES: Oedipus Tyrannus. Two credit hours. Second term. *Tu., Th., at 3.* Prerequisite, courses 7 to 12. Associate Professor HODGMAN.

18. AESCHYLUS: Agamemnon. Two credit hours. Third term. *Tu., Th., at 3.* Prerequisite, courses 7 to 12. Associate Professor HODGMAN.

19. EPIC POETRY. Two credit hours. First term. *W., F., at 2.* Prerequisite, courses 7 to 12. Professor SMITH.

20. ARISTOPHANES: The Birds. Two credit hours. Second term. *W., F., at 2.* Prerequisite, courses 7 to 12. Professor SMITH. SMITH.

21. POST-CLASSICAL GREEK. Two credit hours. Third term. *W., F., at 2.* Prerequisite, courses 7 to 12. Professor SMITH.

\*22. ANCIENT ART. Lectures on Architecture. Two credit hours. First term. No prerequisite course. Professor SMITH.

\*23. ANCIENT ART. Lectures on Sculpture. Two credit hours. Second term. No prerequisite course. Professor SMITH.

\*24. ANCIENT ART. Lectures on Sculpture. Two credit hours. Third term. No prerequisite course. Professor SMITH.

25. GREEK PHILOSOPHY. Two credit hours. First term. *Tu., Th., at 2.* Prerequisite, courses 7 to 12. Professor SMITH.

26. PLATO: Gorgias or Protagoras. Two credit hours. Second term. *Tu., Th., at 2.* Prerequisite, courses 7 to 12. Professor SMITH.

27. STUDIES IN NEW TESTAMENT GREEK. Two credit hours. Third term. *Tu., Th., at 2.* Prerequisite, courses 7 to 12. Professor SMITH.

28. HISTORICAL GRAMMAR. One credit hour. Three terms. *Th., at 3.* Prerequisite, courses 7 to 12. Associate Professor HODGMAN.

29. RELATIONS OF GREECE AND PERSIA: the Panegyricus of Isocrates. Two credit hours. First term. Prerequisite, courses 7 to 12. Professor SMITH.

30. THE MACEDONIAN SUPREMACY: Arrian's Expedition of Alexander the Great. Two credit hours. Second term. Prerequisite, courses 7 to 12. Professor SMITH.

31. LATER GREEK EPICS: the Argonautica of Apollonius Rhodius. Two credit hours. Third term. Prerequisite, courses 7 to 12. Professor SMITH.

32. MEDIAEVAL ART. Lectures on Architecture. Two credit hours. First term. No prerequisite course. Professor SMITH.

33. MEDIAEVAL ART. Lectures on Sculpture. Two credit hours. Second term. No prerequisite course. Professor SMITH.

34. MEDIAEVAL ART. Lectures on Painting. Two credit hours. Third term. No prerequisite course. Professor SMITH.

[These three courses are biennial, alternating with courses 22, 23 and 24. They will not be offered again till 1908-1909.]

35. PRIVATE LIFE OF THE GREEKS. Lectures. Two credit hours. First term. No prerequisite course. Professor SMITH.

## HISTORY

(See American and European History.)

## ITALIAN

(See Romance Languages.)

## LATIN LANGUAGE AND LITERATURE

(Office, Room 307, University Hall.)

PROFESSOR DERBY, ASSOCIATE PROFESSOR HODGMAN, ASSOCIATE PROFESSOR ELDEN.

N. B.—Except in case of unavoidable conflict, members of Latin 1, 2, 3, whose names begin with any letter from A to F inclusive, will be placed in Section I; those whose names begin with any letter from G to N inclusive, in Section II; all others in Section III.

1. CICERO: *De Senectute* and *De Amicitia*, or Selected Letters. Four credit hours. First term. Prerequisite, four units of preparatory Latin. *Sec. I*: *M.*, *Tu.*, *Th.*, *F.*, at 10. Associate Professor ELDEN. *Sec. II*: *M.*, *Tu.*, *Th.*, *F.*, at 11. Associate Professor HODGMAN. *Sec. III*: *Tu.*, *W.*, *Th.*, *F.*, at 2. Professor DERBY.

2. LIVY: Book 1, 2, 21 or 22. Four credit hours. Second term. Prerequisite, course 1. *Sec. I*: *M.*, *Tu.*, *Th.*, *F.*, at 10. Associate Professor ELDEN. *Sec. II*: *M.*, *Tu.*, *Th.*, *F.*, at 11. Associate Professor HODGMAN. *Sec. III*: *Tu.*, *W.*, *Th.*, *F.*, at 2. Professor DERBY.

3. HORACE: Odes. Four credit hours. Third term. Prerequisite, courses 1 and 2. *Sec. I*: *M.*, *Tu.*, *Th.*, *F.*, at 10. Associate Professor ELDEN. *Sec. II*: *M.*, *Tu.*, *Th.*, *F.*, at 11. Associate Professor HODGMAN. *Sec. III*: *Tu.*, *W.*, *Th.*, *F.*, at 2. Professor DERBY.

4. PLINY: Selected Letters. Three credit hours. First term. *Sec. I*: *M.*, *W.*, *F.*, at 3. Professor DERBY. *Sec. II*: *M.*, *W.*, *F.*, at 9. Associate Professor HODGMAN.

5. TACITUS: *Germania* and *Agricola*; or *Catullus*. Three

credit hours. Second term. *Sec. I: M., W., F., at 3.* Professor DERBY. *Sec. II: M., W., F., at 9.* Associate Professor HODGMAN.

6. TERENCE: Phormio; Plautus, Trinummus or Captivi. Three credit hours. Third term. *Sec. I: M., W., F., at 3.* Professor DERBY. *Sec. II: M., W., F., at 9.* Associate Professor HODGMAN.

\*7. MARTIAL: Selected Epigrams. Three credit hours. First term. *M., W., F., at 3.* Professor DERBY.

\*8. SUETONIUS. Three credit hours. Second term. *M., W., F., at 3.* Professor DERBY.

\*9. TACITUS: Historiae or Annales. Three credit hours. Third term. *M., W., F., at 3.* Professor DERBY.

10. THE ROMAN NOVEL: Petronius; Apuleius. Two credit hours. First term. *Tu., Th., at 9.* Prerequisite, courses 1 to 3, and 4 to 6. Associate Professor HODGMAN.

11. SENECA: Medea; Dialogues. Two credit hours. Second term. *Tu., Th., at 9.* Prerequisite, courses 1 to 3, and 4 to 6. Associate Professor HODGMAN.

12. CICERO: Tusculan Disputations. Two credit hours. Third term. *Tu., Th., at 9.* Prerequisite, courses 1 to 3, and 4 to 6. Associate Professor HODGMAN.

13. SALLUST. Two credit hours. First term. *W., F., at 8.* Prerequisite, courses 1 to 3, and 4 to 6. Associate Professor ELDEN.

14. EPIC POETRY. Two credit hours. Second term. *W., F., at 8.* Prerequisite, courses 1 to 3, and 4 to 6. Associate Professor ELDEN.

15. HORACE: Satires. Two credit hours. Third term. *W., F., at 8.* Prerequisite, courses 1 to 3, and 4 to 6. Associate Professor ELDEN.

16. HORACE: Epistles. Two credit hours. First term. *Tu., Th., at 3.* Professor DERBY.

17. TACITUS: Annals. Two credit hours. Second term. *Tu., Th., at 3.* Professor DERBY.

17a. LATE LATIN. Two credit hours. Third term. *Tu., Th., at 3.* Professor DERBY.

18. TEACHERS' COURSE. Three credit hours. Three terms. *M., W., F., at 9.* Prerequisite, courses 1 to 6. Associate Professor ELDEN.

19. LATIN PROSE COMPOSITION FOR TEACHERS. Three credit hours. Three terms. *M., Tu., F., at 10.* Associate Professor HODGMAN.

Courses 18 and 19 are essential for those students who are preparing to teach Latin. Such students are strongly advised to take also at least one advanced reading course.

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\*Not given until 1907-1908.

20. ROMAN PRIVATE LIFE. One credit hour. Three terms. *Tu., at 8.* Prerequisite, courses 1 to 3, and 4 to 6. Professor DERBY.

20a. ROMAN PUBLIC LIFE. One credit hour. Three terms. *Th., at 8.* Prerequisite, courses 1 to 3, and 4 to 6. Professor DERBY.

21. QUIZ AND REVIEW. One credit hour. Three terms. *M., at 2.* Prerequisite, courses 1 to 3, and 4 to 6. Professor DERBY.

This course will include brief outlines of Latin Literature, Ancient Geography, the field of Classical Philology and a review of some less familiar parts of Latin Grammar.

30. ADVANCED LATIN. One to ten credit hours. Three terms. Not more than six hours selected from the following list will, as a rule, be given in any one year: (a) Latin Literature. (b) Latin Philology. (c) Historical Latin Grammar (sounds and inflections). (d) Historical Latin Grammar (syntax). (e) Advanced Latin Composition. (f) Textual Criticism and Methods of Philological Study. (g) Roman Religion (Fasti of Ovid). (h) Legal Latin (Institutes of Justinian). (i) Mediæval Latin. (j) Inscriptions and Palæography. Hours to be arranged. Professor DERBY, Associate Professor HODGMAN, Associate Professor ELDEN.

## MATHEMATICS

(Office, Room 314, University Hall.)

PROFESSOR BOHANNAN, ASSOCIATE PROFESSOR MCCOARD, ASSOCIATE PROFESSOR BOYD, ASSISTANT PROFESSOR ARNOLD, ASSISTANT PROFESSOR SWARTZEL, ASSISTANT PROFESSOR KUHN, ASSISTANT PROFESSOR CODDINGTON, MR. RASOR, MR. COX, MR. KINDLE.

21. COLLEGE ALGEBRA. Three credit hours. First term. *M., W., F., at 9, 11 and 1.* Professor BOHANNAN, Associate Professor McCOARD, Assistant Professor CODDINGTON.

22. PLANE TRIGONOMETRY. Three credit hours. Second term. *M., W., F., at 9, 11 and 1.* Professor BOHANNAN, Associate Professor McCOARD, Assistant Professor CODDINGTON.

23. ELEMENTARY ANALYTICAL GEOMETRY AND CALCULUS. Three credit hours. Third term. *M., W., F., at 9, 11, and 1.* Prerequisite, course 22. Professor BOHANNAN, Associate Professor McCOARD, Assistant Professor CODDINGTON.

24. PROBLEMS ON ALL PAST WORK. One credit hour. Three terms. *F., at 10.* Assistant Professor SWARTZEL.

28. ANALYTICAL GEOMETRY AND CALCULUS. Three credit hours. Three terms. Prerequisite, courses 21, 22, 23, or 31, 32, 33. Mr. RASOR.

31. COLLEGE ALGEBRA. Five credit hours. First term. *M., Tu., W., Th., F., at 8, 9, 11, 1 and 2.* Professor BOHANNAN, Associate

Professor McCOARD, Assistant Professors ARNOLD, SWARTZEL, KUHN, CODDINGTON, Mr. RASOR, Mr. Cox, Mr. KINDLE.

32. PLANE TRIGONOMETRY. Five credit hours. Second term. *M., Tu., W., Th., F., at 8, 9, 11, 1 and 2.* Professor BOHANNAN, Associate Professor McCOARD, Assistant Professors ARNOLD, SWARTZEL, KUHN, CODDINGTON, Mr. RASOR, Mr. Cox, Mr. KINDLE.

33. ANALYTICAL GEOMETRY. Five credit hours. Third term. *M., Tu., W., Th., F., at 8, 9, 11, 1 and 2.* Prerequisite, course 22 or 32. Professor BOHANNAN, Associate Professor McCOARD, Assistant Professors ARNOLD, SWARTZEL, KUHN, CODDINGTON, Mr. RASOR, Mr. Cox, Mr. KINDLE.

41, 42, 43. CALCULUS. Five credit hours. Three terms. *M., Tu., W., Th., F., at 8, 11 and 1.* Prerequisite, courses 21, 22, 23, or 31, 32, 33. Professor BOHANNAN, Associate Professor McCOARD, Assistant Professors ARNOLD, SWARTZEL, KUHN, CODDINGTON and Mr. RASOR.

71, 72, 73. MECHANICS. Five credit hours. Three terms. *M., Tu., W., Th., at 8, 9 and 11.* Prerequisite, courses 41, 42, 43. Associate Professor BOYD, Assistant Professors KUHN and SWARTZEL.

25. HIGHER MATHEMATICS. From one to ten hours a week may be selected from the following courses: (a) Determinants. (b) Modern Geometry. (c) Modern Higher Algebra. (d) Advanced Analytical Geometry. (e) Advanced Calculus. (f) Space Analytics. (g) Differential Equations. (h) Theory of Equations. (i) Higher Plane Curves. (j) Groups. (k) General Function Theory. (l) Elliptic Functions. (m) Potential Function. (n) Spherical Harmonies. (o) Mathematical Electricity. (p) Mathematical Optics. (q) General Mathematical Physics. (r) Higher Geodesy. (s) Infinite Series and Products. (t) The Teaching of Elementary Mathematics. Professor BOHANNAN, Assistant Professors SWARTZEL, ARNOLD, KUHN, CODDINGTON and Mr. RASOR.

## MILITARY SCIENCE AND TACTICS

(Office, The Armory.)

CAPTAIN GEORGE L. CONVERSE, U. S. A.

The Military Department is open five days during each week of each term.

1. MILITARY DRILL. Four times a week from the opening of college until the December examinations; four times a week from Thanksgiving until April first; four times a week until the close of the school year. Required of all able-bodied male students during first and second years of their course. *M., Tu., W., Th., at 4.*

2. TACTICS. Lectures and recitations. Once a week. Second term.

3. GALLERY PRACTICE. Second term. *M., Tu., W., Th., at 4.*

## PHILOSOPHY

(Office, Room 321, University Hall.)

PROFESSOR SCOTT, ASSISTANT PROFESSOR HAINES, DR. DAVIES.

## I. PHILOSOPHY.

101. INTRODUCTORY LOGIC. Three credit hours. *Sec. I*: Third term. *M., W., F., at 9*. Professor SCOTT. *Sec. II*: First term, *M., W., F., at 9*. Text, Creighton's "Introductory Logic." Practical work in the analysis and criticism of reasoning processes. Recitations and lectures. Assistant Professor HAINES.

103. ETHICS. Three credit hours. Third term. *M., W., F., at 11*. Professor SCOTT.

106. INTRODUCTION TO PHILOSOPHY. Three credit hours. First term. *M., W., F., at 2*. Prerequisite, Psychology 1, and Philosophy 101 or 103; or Psychology 1 and Philosophy 152. Professor SCOTT.

107. THEORY OF KNOWLEDGE. Three credit hours. Second term. *M., W., F., at 2*. Prerequisite, Philosophy 106. Professor SCOTT.

108. METAPHYSICS. Three credit hours. Third term. *M., W., F., at 2*. Prerequisite, Philosophy 106 and 107. Professor SCOTT.

112. ADVANCED ETHICS. Two credit hours. Three terms. *Tu., Th., at 3*. Prerequisite, one year of elementary work, including Philosophy 103. Professor SCOTT.

115. AESTHETICS. Two credit hours. Three terms. *Tu., Th., at 2*. Open to first year students. Dr. DAVIES.

118. PHILOSOPHY OF SCIENCE. Two credit hours. Three terms. *Tu., Th., at 2*. Prerequisite, one year of elementary work, including Philosophy 101. Professor SCOTT.

119. PHILOSOPHY OF RELIGION. Two credit hours. Three terms. *Tu., Th., at 2*. Prerequisite, at least one year of elementary work. Professor SCOTT.

123. PHILOSOPHY OF MIND. Two credit hours. Three terms. *Tu., Th., at 11*. Prerequisite, Philosophy 151, and Psychology 1, or Philosophy 106 and Psychology 1. Dr. DAVIES.

125. THEORY OF MENTAL DEVELOPMENT. Three credit hours. Lectures, assigned readings, and reports. The larger theoretical questions which grow out of a consideration of the facts of mental development, such as the meaning of this development, and especially the meaning of imagination and inventiveness. *Tu., Th., F., at 10*. Prerequisite, Psychology 10. Assistant Professor HAINES.

126. PHILOSOPHY OF EVOLUTION. Three credit hours. Third term. Lectures, assigned reading, and reports. The philosophy of nature from an evolutionary point of view, and especially from the standpoint of mental development and evolution. *Tu., Th., F., at 10*. Prerequisite, Philosophy 125. Assistant Professor HAINES.

141. ETHICAL SEMINARY. Two credit hours. Three terms.

Prerequisite, one year of elementary work and Philosophy 112. Professor SCOTT.

142. PHILOSOPHICAL SEMINARY. Two credit hours. Three terms. Prerequisite, one year of elementary work and Philosophy 106, 107, and 108. Dr. DAVIES.

151. HISTORY OF ANCIENT PHILOSOPHY. Three credit hours. First term. *M., W., F., at 8.* Open to first year students. Dr. DAVIES.

152. HISTORY OF MODERN PHILOSOPHY. Three credit hours. Second and third terms. *M., W., F., at 8.* Open to first year students. Dr. DAVIES.

155. HISTORY OF CHRISTIAN PHILOSOPHY. Three credit hours. Three terms. *M., Th., F., at 10.* Open to first year students. Dr. DAVIES.

157. PLATO. Two credit hours. Three terms. *Tu., Th., at 3.* Prerequisite, one year of elementary work, including Philosophy 151. Dr. DAVIES.

\*159. ARISTOTLE. Two credit hours. Three terms. *Tu., Th., at 3.* Prerequisite, one year of elementary work, including Philosophy 151. Dr. DAVIES.

161. DESCARTES TO KANT. Three credit hours. Three terms. *M., W., F., at 11.* Prerequisite, one year of elementary work, including Philosophy 152. Dr. DAVIES.

\*166. KANT TO HEGEL. Three credit hours. Three terms. *M., W., F., at 11.* Prerequisite, one year of elementary work, including Philosophy 152. Dr. DAVIES.

168. RECENT AND CURRENT PHILOSOPHY. Three credit hours. Three terms. *M., Th., F., at 10.* Prerequisite, one year of elementary work, including Philosophy 152. Professor SCOTT.

## II. PSYCHOLOGY.

(Psychological Laboratory Office, Room 404, University Hall.)

1. GENERAL PSYCHOLOGY. Three credit hours. Two terms. Open to first year students. *Sec. I:* First and second terms. *M., W., F., at 11.* Professor SCOTT. *Sec. II:* Second and third terms. *M., W., F., at 9.* Text, Angell's "Psychology." Lectures, recitations, simple experimentation and careful self-observation. Aims at an intimate knowledge of the facts of the *mental life*. Assistant Professor HAINES.

3. EXPERIMENTAL PSYCHOLOGY. Training in Psychological Methods. Three credit hours. Three terms. *Lecture, F., at 1. Laboratory hours, Th., 1 to 4, and F., 2 to 4,* or may be arranged. Prerequisites, Psychology 1, or Zoology 21. Assistant Professor HAINES.

\*7. ABNORMAL PSYCHOLOGY. Three credit hours. First and second terms. Text, Defendorf's Clinical Psychiatry. Lectures.

\*Not given in 1906-1907.

Clinical studies at the Columbus State Hospital. Reports. *Tu., Th., F., at 10.* Prerequisite, Psychology 1 or 3. Assistant Professor HAINES.

\*8. ANIMAL PSYCHOLOGY. Three credit hours. Third term. Lectures, assigned readings, and reports. A systematic tracing of the known order of mental development through the animal series. *Tu., Th., F., at 10.* Prerequisite, Psychology 1 or 3. Assistant Professor HAINES.

10. SOCIAL PSYCHOLOGY. Three credit hours. First term. Lectures, assigned readings, and reports. The psychology of personality and the psychological relations of persons in a group. The development of peoples and groups. *Tu., Th., F., at 10.* Prerequisite, Psychology 1 or 3. (See Philosophy 125 and 126.) Assistant Professor HAINES.

14. ADVANCED PSYCHOLOGY. Two credit hours. Three terms. *Tu., Th., at 9.* Prerequisite, Psychology 1 or 3. Dr. DAVIES.

31. RESEARCH IN EXPERIMENTAL PSYCHOLOGY. Two credit hours or more. Three terms. Individual investigation of problems, leading to results which may find a place in the "Ohio State University Studies in Psychology," arranged for with the Monograph Supplement Series of the Psychological Review. Prerequisite, Psychology 1 and 3. Assistant Professor HAINES.

32. PSYCHOLOGICAL SEMINARY. Two credit hours. Three terms. Individual Investigations of Problems in Psychological Theory. Subject for 1906-1907, The Psychology of the Feelings. Individual investigation of special problems in this field. Reports, discussions and theses. *M., at 4.* Assistant Professor HAINES.

#### PHYSICAL EDUCATION FOR MEN (Gymnasium and Armory.)

MR. HUDDLESON.

1. GYMNASIUM. Physical examination required of all first year men before October 31, 1906. Light and heavy gymnastics with special prescription work for individuals, two hours per week during winter term.

2. GYMNASIUM. Physical examination required of all second year men before October 6, 1906. Same work as above with additional advanced work (2 hours per week.) Fall term.

#### PHYSICAL EDUCATION FOR WOMEN (Gymnasium and Armory.)

DIRECTOR MARTIN.

1. GYMNASIUM. Three terms. Required of all young women during the first year of their course. *M., Tu., Th., F., 9 or 11.*

2. GYMNASIUM. Three terms. Required of all young women during the second year of their course. *M., Tu., Th., F., 8 or 10.*

## PHYSICS

(Office, Room 24, Physics Hall.)

PROFESSOR THOMAS, PROFESSOR COLE, ASSISTANT PROFESSOR KESTER,  
 ASSISTANT PROFESSOR EARHART, MR. CLAWSON, MR. HEIL.

2. GENERAL PHYSICS. Three credit hours. Three terms. *M., W., at 9, or Tu., Th., at 3.* One quiz. *Time to be arranged.* Prerequisite, Mathematics 21, 22, 23, or 31, 32, 33. Professor THOMAS.

3. PROBLEMS. Two credit hours. Three terms. *Tu., Th., at 9.* Prerequisite, Mathematics 21, 22, 23, or 31, 32, 33. Professor THOMAS, Assistant Professor KESTER, Mr. CLAWSON, Mr. HEIL.

4. ELECTRICITY AND MAGNETISM. Three credit hours. First term. *M., Tu., Th., at 10.* Professor THOMAS.

11. GENERAL PHYSICS. Three credit hours. Three terms. Lecture. *W., at 11 or 2.* Laboratory, *Tu., Th., 8 to 10 or Th., F., 2 to 4.* Professor COLE.

12. LABORATORY. Three to five credit hours. Three terms. *M., Tu., W., 1 to 4.* Prerequisite, course 2 (or may accompany course 2). Professor COLE, Assistant Professor KESTER.

17. THE TEACHING OF PHYSICS. Three credit hours. Third term. Prerequisite, two terms of college work in physics. *Hours to be arranged.* Professor COLE.

## FOR ADVANCED UNDERGRADUATES AND GRADUATES.

13. ADVANCED LABORATORY. Three to five credit hours. Three terms. Prerequisite, course 2 or 11 and course 12. Professor THOMAS, Professor COLE, Assistant Professor KESTER, Assistant Professor EARHART.

14. THEORETICAL PHYSICS. (a) Advanced Light or (b) Radiation, or (c) Theory of Heat, or (e) Evolution of Experimental Physics. Three to five credit hours. Three terms. Prerequisite, course 2 and Calculus. Professor THOMAS, Professor COLE, Assistant Professor KESTER.

16. PHYSICAL SEMINARY. One credit hour. Three terms. Prerequisite, a year of college work in physics. Professor COLE.

## FOR GRADUATES.

15. RESEARCH LABORATORY. Three to five credit hours. Three terms. Prerequisite, two years of laboratory work in physics. Professor THOMAS, Professor COLE.

## PHYSIOLOGY

(See Anatomy and Physiology.)

## POLITICAL ECONOMY

(See Economics and Sociology.)

## POLITICAL SCIENCE.

(See American History and Political Science.)

## PSYCHOLOGY

(See Philosophy.)

## RHETORIC AND ENGLISH LANGUAGE

(See English.)

## ROMANCE LANGUAGES AND LITERATURES

(Office, Room 305, University Hall.)

PROFESSOR BOWEN, ASSOCIATE PROFESSOR BRUCE, ASSISTANT PROFESSOR  
INGRAHAM, MISS HASKELL, MISS JACKSON, MRS. FAIRFIELD.

## I. FRENCH.

1. ELEMENTARY FRENCH. Four credit hours. Three terms. Grammar: Fraser and Squair's or Aldrich and Foster's Foundations. Reader: Aldrich and Foster's or Bowen's First Scientific. Historical and narrative prose; one or more prose comedies. In this course the study of the language is taken up from the beginning. Stress is laid upon the acquisition of a correct pronunciation, after which the entire energy of the student is directed toward the attainment of a full and accurate reading knowledge of the language. Grammar and composition are made to contribute to this end. Sight reading is emphasized. *Sec. I and II: M., Tu., Th., F., at 10.* *Sec. III and IV: M., Tu., Th., F., at 11.* *Sec. V and VI: Tu., W., Th., F., at 2.* *Sec. VII: Tu., W., Th., F., at 3.* All instructors in the department teach one or more sections of this course.

2. MODERN FRENCH LITERATURE. Four credit hours. Three terms. The study of the literature as such is now taken up. The work of the year covers a survey of two or more of the following subjects: (1) Contes; (2) The Novel (Balzac or Hugo); (3) Lyric Poetry (Bowen's Modern French Lyrics or Canfield's French Lyrics); (4) Romantic Drama (Hugo). Prose Composition. Lectures supplement the work. Private reading required. Systema-

tic attention given to syntax and idiom. *Sec. I: M., Tu., Th., F., at 10. Sec. II: M., Tu., Th., F., at 11. Sec. III: Tu., W., Th., F., at 2.* Prerequisite, course 1 or equivalent. Associate Professor BRUCE, Miss HASKELL.

3. SCIENCE READING. Four credit hours. Third term. Herder's Scientific Reader and Luquiens' Popular Science, or other similar works. A course of rapid reading introductory to the vocabulary of scientific literature. Intended mainly for students expecting to specialize in science. *M., Tu., W., Th., at 9.* Prerequisite, course 2, first and second terms. Assistant Professor INGRAHAM.

4. FRENCH COMEDY OF THE SEVENTEENTH CENTURY. Three credit hours. First term. Study of the growth of French Comedy, with work centering upon Molière (three plays) and Regnard. Lectures and collateral reading. *M., Th., F., at 10.* Given biennially, alternating with course 16. Prerequisite, courses 1 and 2. Professor BOWEN.

5. FRENCH TRAGEDY. Three credit hours. Second term. Lectures and readings. Corneille, Racine and Voltaire. Critical study of Le Cid, Andromaque, Esther and Zaire. *M., Th., F., at 10.* Given biennially, alternating with course 17. Prerequisite, courses 1 and 2. Professor BOWEN.

6. SEVENTEENTH CENTURY PROSE. Three credit hours. Third term. Critical study of Descartes, Pascal, La Bruyère and others. Warren's Selections, supplemented by lectures. *M., Th., F., at 10.* Given biennially, alternating with course 18. Prerequisite, courses 1 and 2. Professor BOWEN.

7. ADVANCED PROSE COMPOSITION. One credit hour. Three terms. Cameron's French Composition, followed by other selections. Dictation. Conversation. Intended for students who, expecting to specialize in French, desire to continue their training on the practical side of the language. *Sec. I: Tu., at 10. Sec. II: Tu., at 11.* Prerequisite, courses 1 and 2. Professor BOWEN, Associate Professor BRUCE.

8. PROSE OF THE ROMANTIC PERIOD. Two credit hours. First term. Readings and lectures. Selections from two or three leading Romanticists. *Tu., Th., at 9.* Given biennially, alternating with course 11. Prerequisite, courses 1 and 2. Associate Professor BRUCE.

9. RECENT FRENCH PROSE. Two credit hours. Second term. Rapid reading with lectures, the work centering upon such writers as Bourget, Daudet, Loti and Zola. *Tu., Th., at 9.* Given biennially, alternating with course 12. Prerequisite, courses 1 and 2. Associate Professor BRUCE.

10. PRACTICE IN SPEAKING AND WRITING FRENCH: Based on Daudet's Stories. Two credit hours. Third term. Students wishing to elect this course must have the consent of the instructor in

charge. *Tu., Th., at 9.* Given biennially, alternating with course 13. Associate Professor BRUCE.

\*11. FRENCH TRAVEL WRITERS. Two credit hours. First term. Readings and lectures. Scenes of travel from Gautier, Hugo and Dumas. Gautier's *Voyage on Espagne* (Clarendon Press), and others. *Tu., Th., at 9.* Given biennially, alternating with course 8. Prerequisite, courses 1 and 2. Associate Professor BRUCE.

\*12. EIGHTEENTH CENTURY PROSE. Two credit hours. Second term. Readings and lectures. Selections from Voltaire (ed. Cohn and Woodward) or others. *Tu., Th., at 9.* Given biennially, alternating with course 9. Prerequisite, course 1 and 2. Associate Professor BRUCE.

\*13. ADVANCED CONVERSATIONAL PRACTICE: Based on Stories of Coppée and Maupassant. Two credit hours. Third term. Students wishing to elect this course must have the consent of the instructor in charge. *Tu., Th., at 9.* Given biennially, alternating with course 10. Associate Professor BRUCE.

14. FRENCH SEMINARY A. Two credit hours. Three terms. Studies in specific literary fields. The subjects for the year 1906-1907 will be: (1) Recent Tendencies of French Drama, and (2) Some Phases of Romantic Verse. Toward the close of the year several lectures will be given on methods of teaching French and the teachers equipment. *Tu., Th., at 2.* Given biennially, alternating with course 15. Prerequisite, courses 1, 2, 4, 5, 6 and 7, or an equivalent. Professor BOWEN.

\*15. FRENCH SEMINARY B. Two credit hours. Three terms. Studies in Old French (with emphasis of la Chanson de Roland) and in the language and writers of the Sixteenth Century (Darmesteter et Hatzfeld, Morceaux choisis); special consideration of Montaigne. *Tu., Th., at 2.* Given biennially, alternating with course 14. Prerequisite, courses 1, 2, 4, 5, 6 and 7, or an equivalent. Professor BOWEN.

\*16. FRENCH COMEDY OF THE EIGHTEENTH CENTURY. Three credit hours. First term. Lectures on the growth of French Comedy, with work centering upon Marivaux and Beaumarchais. Olmsted's edition of Marivaux's Comedies, and *le Barbier de Séville*. *M., Th., F., at 10.* Given biennially, alternating with course 4. Prerequisite, courses 1 and 2. Professor BOWEN.

\*17. FRENCH SOCIETY IN THE SEVENTEENTH CENTURY. Three credit hours. Second term. Crane's Selections; with lectures. Special reference to the Précieux Movement. *M., Th., F., at 10.* Given biennially, alternating with course 5. Prerequisite, courses 1 and 2. Professor BOWEN.

\*18. PRECURSORS OF FRENCH ROMANTICISM. Three credit hours. Third term. Rousseau, Chateaubriand (Bowen's *Atala* and *René*) and Madame de Staël. With lectures. *M., Th., F., at 10.*

\*Not given in 1906-1907.

Given biennially, alternating with course 6. Prerequisite, courses 1 and 2. Professor BOWEN.

19. GRADUATE COURSES. Special courses are arranged at the beginning of each year to meet the needs of individual graduate students. Professor BOWEN.

## II. ITALIAN.

1. ELEMENTARY ITALIAN. Two credit hours. Three terms. Grammar (Edgren's or Young's) and Bowen's Italian Reader. Modern prose. Comedy (Goldoni.) Students are advised to postpone the election of this course until they have completed French 1, or its equivalent. *M., W., at 3.* Given biennially. Associate Professor BRUCE.

\*2. ADVANCED ITALIAN. Two credit hours. Three terms. Manzoni (*I Promessi Sposi*). Dante (*Vita Nuova, Inferno*). With lectures. *M., W., at 3.* Given biennially. Prerequisite, course 1. Associate Professor BRUCE.

## III. SPANISH.

1. ELEMENTARY SPANISH. Four credit hours. Three terms. Grammar (Hill's and Ford's or Edgren's), and Ingraham's *Victoria y Otros Cuentos*. Easy prose and plays. Composition and conversation. *Sec. I: M., Tu., W., Th., at 9. Sec. II: M., Tu., Th., F., at 11. Sec. III. and IV: Tu., W., Th., F., at 3.* Assistant Professor INGRAHAM, Miss HASKELL, Mr. \_\_\_\_\_

2. MODERN SPANISH LITERATURE. Four credit hours. Three terms. The Modern Novel and Drama. Lectures covering a survey of the literature. Composition and conversation continued. *Tu., W., Th., F., at 2.* Prerequisite, course 1. Assistant Professor INGRAHAM.

3. CLASSICAL PROSE AND DRAMA. Two credit hours. Three terms. Cervantes (selections from *Don Quixote*), Calderon and others. Lectures. *Tu., Th., at 3.* Prerequisite, course 1. Professor BOWEN.

## SOCIOLOGY

(See Economics and Sociology.)

## SPANISH

(See Romance Languages.)

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\*Not given in 1906-1907.

## ZOOLOGY AND ENTOMOLOGY

(Office, Room 3, Biological Hall.)

PROFESSOR OSBORN, ASSOCIATE PROFESSOR HINE, ASSOCIATE PROFESSOR LANDACRE, MR. SANDERS, MR. SURFACE.

1. INVERTEBRATE AND VERTEBRATE. Three credit hours. Three terms. *Lecture, Tu., Th., at 8, or M., F., at 10. Laboratory, Tu., 1 to 3.* Professor OSBORN, Associate Professor LANDACRE.

2. COMPARATIVE ANATOMY OF VERTEBRATES. Three or five credit hours. Three terms. *Quiz, W., at 1, Laboratory, M., Tu., W., 1 to 4.* Prerequisite, course 1 or equivalent. Associate Professor LANDACRE.

12. GROSS ANATOMY OF THE FROG. Three or five credit hours. First term. *Time to be arranged.* Prerequisite, course 1. Associate Professor LANDACRE.

13. MINUTE ANATOMY OF THE FROG. Three or five credit hours. Second term. *Time to be arranged.* Prerequisite, course 1. Associate Professor LANDACRE.

14. EMBRYOLOGY OF THE FROG. Three or five credit hours. Third term. *Time to be arranged.* Prerequisite, course 1. Associate Professor LANDACRE.

15, 16, 17. INVERTEBRATE MORPHOLOGY. Three or five credit hours. Three terms. *Time to be arranged.* Prerequisite, course 1. Professor OSBORN.

18. INVERTEBRATE EMBRYOLOGY. Three or five credit hours. Three terms. *Laboratory.* *Time to be arranged.* For graduates. Prerequisite, courses 1 and 2. Professor OSBORN.

19. VERTEBRATE EMBRYOLOGY: Karyokinesis, etc. Three or five credit hours. First term. *Lecture, Th., at 1. Laboratory, Th., F., 1 to 4.* Prerequisite, course 1. Associate Professor LANDACRE.

20. VERTEBRATE EMBRYOLOGY: Chick and Mammal. Three or five credit hours. Second and third terms. *Lecture, Th., at 1. Th., F., 1 to 4.* Prerequisite, courses 1 and 19. Associate Professor LANDACRE.

21. COMPARATIVE NEUROLOGY. Three to five credit hours. Three terms. *Time to be arranged.* Prerequisite, course 1 or equivalent, but is open to advanced students in psychology and pedagogy. Associate Professor LANDACRE.

22. CYTOLOGY. Three or five credit hours. Three terms. Time to be arranged. Prerequisite, course 1 and equivalent of 2, or 15, 16, 17. Professor OSBORN.

23. ENTOMOLOGY. Three or five credit hours. Three terms. Time to be arranged. Prerequisite, course 1. Professor OSBORN.

24. ORINTHOLOGY. Two credit hours. Three terms. *Lecture, M., at 10. Laboratory, to be arranged.* Associate Professor HINE.

25. RESEARCH WORK. Five or ten credit hours. Three terms. Prerequisite, course 1 and the equivalent of 2 or 15, 16, 17, or 19, 20. Professor OSBORN.

26. SEMINARY. One credit hour. Three terms. *F., at 4.* Pro-terms. Professor OSBORN. Associate Professor LANDACRE.
27. TEACHERS' COURSE. Two or three credit hours. Three terms. Professor OSBORN. Associate Professor LANDACRE.
30. INVERTEBRATE ZOOLOGY. Five credit hours. For graduates only. *Time to be arranged.* Professor OSBORN.
33. VERTEBRATE EMBRYOLOGY. Three or five credit hours. Study of Karyokinesis, Germ layers, organogeny, etc. For graduates only. Associate Professor LANDACRE.

## ANNOUNCEMENTS OF DEPARTMENTS OF OTHER COLLEGES OF THE UNIVERSITY

The Faculty of the College of Arts, Philosophy, and Science will accredit towards the degree of Bachelor of Arts a limited amount of work in the courses announced below. The student desiring to elect one or more of these courses is required to file a petition with his election card in June, showing the special purpose which he has in view, and bearing the written approval of the professor in charge of the course desired. The Executive Committee will not count towards the degree in Arts any course named below that is not allied to the work of the student in the College of Arts, Philosophy, and Science. But a student with no conditions outstanding who has at least forty-five term hours to his credit may, without petition, elect any course in the University on which he is prepared to enter, as extra work, not counting towards the degree of Bachelor of Arts.

### ARCHITECTURE AND DRAWING (Office, Brown Hall.)

PROFESSOR BRADFORD, ASSOCIATE PROFESSOR FRENCH, ASSISTANT PROFESSOR LEWIS, MR. MARTIN, MR. TIDBALL.

(Of the courses offered in the Department of Architecture and Drawing, the following are open to students in the College of Arts, Philosophy, and Science.)

7. PHOTOGRAPHY. Two credit hours. First term. *M., T., 1 to 3.* Prerequisite, Chemistry 1. Professor BRADFORD.
15. TECHNICAL DRAWING. One and one-half credit hours. Second and third terms. *M., 1 to 4.*
17. STUDY IN WATER COLOR OR OIL PAINTING. Two or three credit hours. First term. This includes landscapes and heads from color studies. Prerequisite, Drawing 26. Mr. MARTIN.

18. WATER COLOR AND OIL PAINTING. Two or three credit hours. Second term. Study and models, embracing the study, color and color Perspective. Mr. MARTIN.

19. CONTINUATION OF 18. Two or three credit hours. Third term. Advanced Charcoal Drawing from plaster casts. Elementary study from life. Sketching, simple selections from nature. color values. Mr. MARTIN.

17, 18 and 19 constitutes a continuous year's work.

20. MECHANICAL DRAWING. One and one-half credit hours. First term. *M.*, 1 to 4.

24. FREEHAND DRAWING. One or two credit hours. First term. Assistant Professor LEWIS, Mr. MARTIN, Mr. TIDBALL.

25. FREEHAND DRAWING. One or two credit hours. Second term. Assistant Professor LEWIS, Mr. MARTIN, Mr. TIDBALL.

26. FREEHAND DRAWING. One or two credit hours. Third term. Assistant Professor LEWIS, Mr. MARTIN, Mr. TIDBALL.

24, 25 and 26 constitute a continuous year's work.

45. TECHNICAL DELINEATION. Pencil rendering. Two credit hours. First term. Prerequisite, Drawing 26. *Tu., Th., 10 to 12.*

46. TECHNICAL DELINEATION: Elementary Pen and Ink rendering. Two credit hours. Second term. Prerequisite, Drawing 29. site, Drawing 29. *Tu., Th., 10 to 12.*

47. TECHNICAL DELINEATION: Brush rendering. Two credit hours. Third term. Prerequisite, Drawing 45. *Tu., Th., 10 to 12.*

Courses 45, 46 and 47 are designed for students in Biological work and provide training in rendering in pencil, pen and ink, and brush.

## ART

(See also Architecture and Drawing.)

1. NORMAL COURSE. Two credit hours. Three terms. *Time to be arranged.* Professor BRACKEN.

2. ACADEMIC COURSE. Two credit hours. Three terms. *Time to be arranged.* Professor BRACKEN.

## CIVIL ENGINEERING

(Office, Room 32, Brown Hall.)

PROFESSOR SHERMAN, MR. CHAMBERLIN.

(Of the twenty-one courses offered in the Department of Civil Engineering, the following course is open to students of the College of Arts, Philosophy, and Science.)

21. SURVEYING. Three credit hours. Third term. *M., W., F., at 9.* Prerequisite, Mathematics 21, 22, 23 or equivalent. Professor SHERMAN, Mr. CHAMBERLIN.

## DOMESTIC SCIENCE

(Office, Rooms 1, 3 and 10, Hayes Hall.)

Students may elect courses in either Domestic Art or Domestic Science, but not in both.

## DOMESTIC ART.

ASSOCIATE PROFESSOR BABB.

1. HANDCRAFT. Two credit hours. First term. *W., at 11 and Th., 1 to 4.* Prerequisite, Drawing 29 or equivalent. Associate Professor BABB.

2. TEXTILES. Two credit hours. Third term. Days and hours as in course 1. Prerequisite, course 1. Associate Professor BABB.

3. TEXTILES. Two credit hours. Third term. Days and hours as in course 1. Prerequisite, course 2. Associate Professor BABB.

## DOMESTIC SCIENCE.

PROFESSOR STONER.

1. FOOD ECONOMICS. Five credit hours. First term. *Tu., Th., at 9, and Tu., W., 1 to 4.* Prerequisite, Chemistry 1 or its equivalent, and Botany. Professor STONER.

2. FOOD ECONOMICS. Five credit hours. Second term. Days and hours as in course 1. Prerequisite, course 1. Professor STONER.

3. ADVANCED FOOD ECONOMICS. Five credit hours. Third term. Days and hours as in course 1. Prerequisite, course 2. Professor STONER.

10. HOUSEHOLD ECONOMICS. Two credit hours. Third term. *Tu., Th., at 10.* Professor STONER.

## ELECTRICAL ENGINEERING

(Office, Room 8, Electrical Building.)

PROFESSOR CALDWELL, ASSOCIATE PROFESSOR ANDEREGG, ASSISTANT PROFESSOR COGGESHALL.

6. ELECTRICAL ENGINEERING. Two credit hours. First and second terms. *M., Th., at 10.* Prerequisite, Mathematics 28 and Physics 2. Associate Professor ANDEREGG.

7. ELECTRICAL ENGINEERING; LABORATORY. Two credit hours. First and second terms. *M., W., 1 to 5; S., 8 to 12.* Course 6 must accompany this course. Associate Professor ANDEREGG, Assistant Professor COGGESHALL.

8. DIRECT CURRENT DYNAMO MACHINERY. Four credit hours. Second term. *M., T., Th., F., at 9.* Prerequisite, Physics 4 and 6, or its equivalent. Associate Professor ANDEREGG.

9. ELEMENTARY DYNAMO LABORATORY. Four credit hours. Third term. *W., Th., F., 1 to 5; S., 8 to 12.* Election subject to available accommodations. Prerequisite, course 8. Associate Professor ANDEREGG, Assistant Professor COGGESHALL.

15. ALTERNATING CURRENT CIRCUITS AND MACHINERY. Two credit hours. Third term. *M., Th., at 10.* Prerequisite, course 9. Professor CALDWELL.

16. CONTINUATION OF 15. Three credit hours. First term. *M., W., F., at 11.* Prerequisite, course 15.

17. CONTINUATION OF 16. Two credit hours. Second term. *M., W., at 8.* Prerequisite, course 16.

11. ADVANCED DYNAMO LABORATORY. Three credit hours. Three terms. *Tu., or Th., 10 to 5.* Must be accompanied by courses 16 and 17. Professor CALDWELL, Assistant Professor COGGESHALL.

### MECHANICAL ENGINEERING

(Office, Room 11, Hayes Hall.)

PROFESSOR MAGRUDER.

34. THERMODYNAMICS. Five credit hours. Second term. *M., Tu., W., Th., F., at 8.* Open only by permission of instructor. Professor MAGRUDER.

### METALLURGY AND MINERALOGY

(Office, School of Mines Building.)

PROFESSOR N. W. LORD.

2. MINERALOGY. Three credit hours. Third term. *M., W., F., at 11.* Prerequisite, Mathematics 21, 22, 23, or equivalent, and Chemistry 1. Professor LORD.

3. DETERMINATIVE MINERALOGY. Five credit hours. Third term. *M., Tu., 1 to 5.* Prerequisite, course 2. Professor LORD.

5. METALLURGICAL LABORATORY. Five credit hours. Three terms. *W., Th., F., 1 to 4.* Prerequisite, Physics 2 and two years of Chemistry. Professor LORD.

## THE BRYAN PRIZE

Through the generosity of Hon. William J. Bryan an annual prize of fifteen dollars is offered for the best essay on the principles underlying the form of government of the United States. Competition for this prize is open to all students of the University. For further information, make inquiry of the head of the department of American History and Political Science.

## HIGH SCHOOL COMMITTEE

In order to serve the schools of the state the Faculty has provided a committee, one of the duties of which is to assist graduates of the University to teaching positions for which they are best fitted. Any student of the University intending to teach is invited to enroll his name with the committee on a blank provided for that purpose. Blanks may be obtained from the Executive Office. Graduates of the University who are already engaged in teaching are also cordially invited to correspond with the appointment committee with a view to bettering their positions. Correspondence is invited from Boards of Education and from Superintendents and Principals of schools in need of teachers. No fee is charged for the services of the committee. The secretary of the committee is Professor David R. Major, to whom all correspondence should be addressed.

## FEES AND EXPENSES

## GENERAL CHARGES

All term dues must be paid at the opening of each term as a condition of admission to classes.

**INCIDENTAL FEE**—A charge of six dollars a term, eighteen dollars a year, is made against all students, under the head of incidental expense. In the case of former students if this fee is not paid until the second day of the term one dollar will be added, and for each succeeding day of delinquency fifty cents will be added.

**TUITION**.—Tuition is free in the College of Arts, Phil-

osophy, and Science. But students who elect five hours or less in the College of Law pay a fee of \$7.50 per semester; more than five hours, \$22.50.

#### LABORATORY FEES

A fee of one dollar per term is charged in all laboratory courses. In addition to this fee, all students are required to pay for materials consumed. Students in chemistry are also required to make a deposit of five dollars at the beginning of each term at the Chemical Store Room to cover the cost of their laboratory supplies.

The laboratory courses, for each of which the fee is one dollar per term, are as follows: Anatomy and Physiology, 3, 4, 5, 9, 11; Astronomy 2, 4, 5, 6; Bacteriology, 5, 6; Botany, all courses; Chemistry, all courses except 11, 21, 30, 35, 40, 25, 26, 28, 36; Civil Engineering, 21; Domestic Science, 1, 2, 3; Domestic Art, 1, 2, 3; Drawing, 7, 10, 14, 17, 18, 19, 24, 25, 26; Electrical Engineering, 7, 9, 11; Geology, 13, 14, 15, 16, 19, 20, 11, 12; Metallurgy, 3, 5; Physics, 11, 12, 13, 15; Zoology and Entomology, all courses except 26, 27.

#### LOCKER FEE

A fee of one dollar a term is required from those who make use of a locker in the gymnasium.

#### CADET UNIFORMS

The uniform with which the members of the battalion are required to provide themselves costs (without overcoat) about fourteen dollars. It is quiet in pattern, and is designed to be worn in place of civilian dress.

#### GRADUATION FEE

A fee of five dollars, to cover expense of graduation and diploma is required of each person receiving one of the ordinary degrees from the University, and this fee must be paid before the degree is conferred. A like fee of ten dollars is charged to each person receiving one of the higher graduate degrees.

## AUDITOR'S FEE

On presentation to the Bursar of the written consent of the head of a department, and on the payment to the Bursar of an auditor's fee of one dollar, any person engaged in teaching is permitted to attend, in that department, any class or course (not to exceed three hours a week for one-half year) which is announced to be especially for teachers or those intending to teach.

## ROOMS AND BOARD

There are two dormitories on the University grounds for the use of students. Each occupant is charged by the University a rent of a dollar and a half a term.

The South Dormitory affords unfurnished rooms to such students as desire to board themselves, and thus to reduce their expenses to a minimum. The expense of living in this way is about two dollars per week. Applications for rooms should be made to the President of the University.

The North Dormitory affords rooms accommodating sixty-four students and table board for about one hundred. Board, furnished rooms, fuel, light and washing are, at present prices, supplied for about three dollars and twenty-five cents a week. Students will be admitted on special recommendation to the President of the University.

Boarding clubs are also formed in the neighborhood of the University. Furnished rooms are rented at seventy-five cents to one dollar a week for each student, and the cost of table board is two dollars to three dollars a week.

Board with furnished rooms can be obtained in private families, within convenient distances of the University, at rates varying from three and a half dollars to five dollars a week. The ruling rate may be taken as four dollars.

## FELLOWSHIPS

To encourage graduates of this University, and of other similar and approved institutions in this State, to continue their studies and to undertake advanced work leading to the higher degrees, the University authorities have established fellowships in several departments. These demand about one-half of the time of the fellow for laboratory or other similar assistance—as far as possible along the line of his graduate study. The remainder of his time is given to graduate work. The fellowships pay from \$150 to \$300 for the University year. The following are the present holders of fellowships:

James A. Beer, B. Sc.....	Anatomy and Physiology
Opal Tillman, B. Sc.....	Botany
Robert Griggs, B. Sc.....	"
Paul G. Moore, A.B. (Miami Univ.).....	Chemistry
Wm. V. Linder, A.B.....	"
Ralph Darner, A.B. (Wittenberg College) ..	"
C. F. Long, A.B. (Miami Univ.) .....	"
Wm. F. Gephart, B.A.....	Economics and Sociology
Harry G. Brown, B.A. (Williams College) ..	English
Edith H. Richardson, B.A. (Mt. Holyoke College) .....	"
W. R. Goodrich, A.B. (Univ. of Mich.)....	Germanic Languages
Herbert Hughes, A.B. (Miami Univ.) .....	" "
Lewis C. Cox, B.A.....	Mathematics
J. F. Kindle, B.A.....	"
Gertrude S. Jackson, B.A.....	Romance Languages
C. F. Jackson, A.B. (DePauw Univ.).....	Zoology and Entomology
W. B. Herms, B. Sc. (Wallace College) ....	" " "

## RELIGIOUS AND MORAL CULTURE.

The Young Men's Christian Association endeavors to cultivate a healthy religious atmosphere in the University by holding weekly meetings, by promoting the study of the Bible and the progress of Christianity. In the 48 group classes for Bible study almost one-third of the men in the University have been enrolled this year. The home and

headquarters of the association is located at 136 West Tenth Avenue.

Prospective students are invited to write for the Student's Hand-Book of information concerning the University or for special information concerning board, rooms, or employment to the General Secretary, O. S. U. Y. M. C. A., 136 West Tenth Avenue, Columbus, Ohio.

The Young Women's Christian Association holds religious meetings regularly at noon on Tuesdays. This organization is active and efficient in working for the higher interests of the young women. Young women planning to enter the University are invited to correspond with reference to board or rooms with the General Secretary, O. S. U. Y. W. C. A., University Hall, Columbus, Ohio.

### SELF SUPPORT

There is a large amount of work upon the University farm which is assigned to students, preference being given to those who are studying Agriculture. *But the University cannot promise work to all applicants.* Many students find work in private families, in offices, and in various occupations, by means of which they defray a portion of their expenses. A person of ability and energy, who is a master of a trade, or who can do good work of any kind, can generally find employment, but prospective students are cautioned against depending wholly upon such uncertain sources of income.

Students should distinctly understand that where they attempt entire or partial self-support they should lengthen the term of study.

As an accommodation the executive office co-operates as far as possible in this matter. The Y. M. C. A. offers its services in helping young men to secure employment. Very much depends, however, on the individual's power of initiative. Students should not come to the university expecting others to find places for them. They should report to the executive office from time to time as to their needs and their work. This will enable the authorities to be more helpful than otherwise would be possible.



The Ohio State University Bulletin is issued fifteen times during the Academic year, monthly in October, November, and June, and bi-weekly in December, January, February, March, April, and May. Entered as second-class matter November 17, 1905, at the post office at Columbus, Ohio, under Act of Congress, July 16, 1894.

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Ohio State University  
Bulletin

College of Arts Philosophy and  
Science



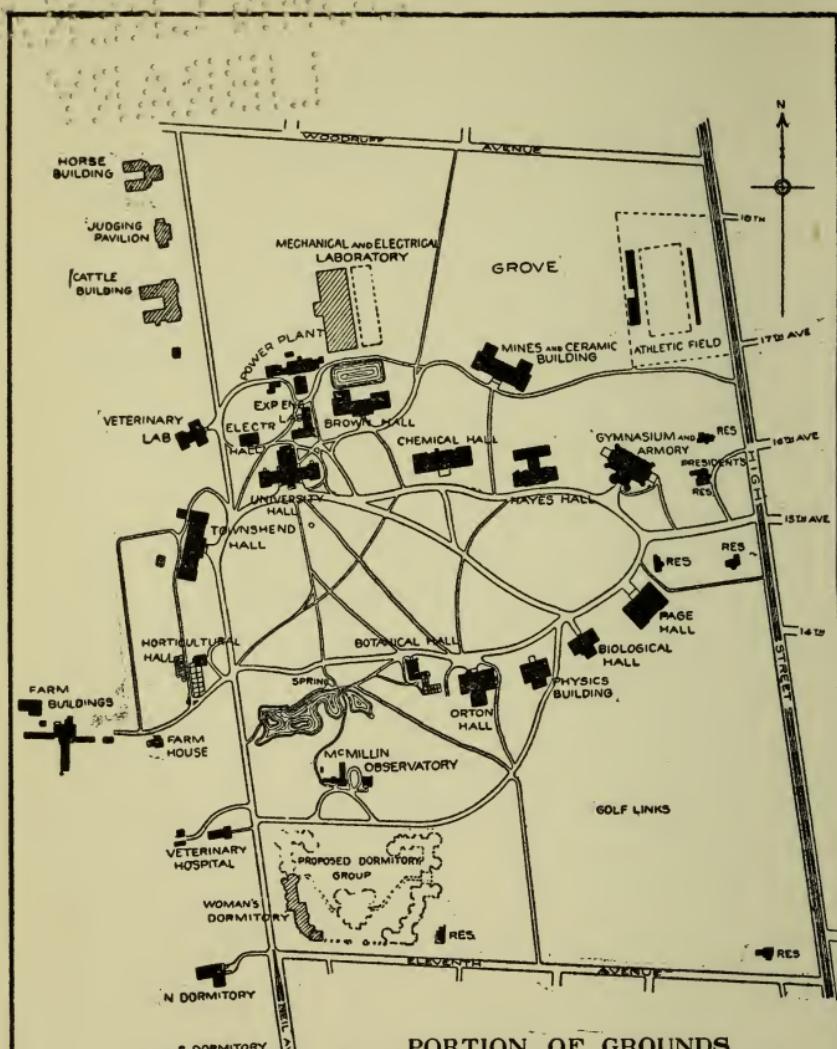
MARCH 14, 1907.

*Q.H.T.*

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PUBLISHED BY THE UNIVERSITY AT COLUMBUS

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PORTION OF GROUNDS  
OHIO STATE UNIVERSITY

SCALE OF FEET

0 100 200 300 400 500 600 700 800

1907

## UNIVERSITY CALENDAR

1907

Entrance examinations, (8 a. m.) Tuesday to Saturday, June 11 to 15.

Summer term, June 24 to August 2.

Entrance examinations, (8 a. m.) Tuesday to Saturday, September 10 to 14.

First term begins—Registration Day—Tuesday, September 17.

President's Annual Address, (11 a. m.) Friday, September 20.

Latest date of admission to candidacy for a degree at the Commencement of June, 1908, Tuesday, October 1.

Thanksgiving recess, November 28 and 29.

Latest date for filing theses subjects, Saturday, December 14.

First term ends, Wednesday, December 18.

### CHRISTMAS VACATION

1908

Second term begins—Registration Day—Thursday, January 2.

Washington's Birthday, Saturday, February 22.

Second term ends, Friday, April 3.

### SPRING RECESS

Third term begins—Registration Day—Wednesday, April 8.

Field Day—Athletic Association—Saturday, May 9.

Competitive Drill—Cadet Regiment—Saturday, May 23.

Memorial Day, Saturday, May 30.

Final examinations, Friday to Thursday, June 12 to 18.

Latest date for presenting theses, Saturday, June 13.

Entrance examinations, (8 a. m.) Tuesday to Saturday, June 16 to 20.

Latest date for filing bound copy of thesis, Friday, June 19.

Commencement, Wednesday, June 24.

## OHIO STATE UNIVERSITY

The Ohio State University, located in Columbus two miles north of the Union Station, is a part of the public educational facilities maintained by the State. It comprises six colleges:

The College of Agriculture and Domestic Science,  
The College of Arts, Philosophy, and Science,  
The College of Engineering,  
The College of Law,  
The College of Pharmacy,  
The College of Veterinary Medicine.

This bulletin is devoted exclusively to the work of the College of Arts, Philosophy, and Science.

(Note: In requesting any of the announcement bulletins of the University, address the Secretary of the University Faculty, Ohio State University, Columbus, Ohio.)

## COLLEGE OF ARTS PHILOSOPHY AND SCIENCE

This College comprises those courses of study that are designed to furnish a liberal education in the languages and literatures, the sciences, mathematics, philosophy, history, politics, administration, economics, sociology, commerce, and educational theory, as distinguished from the technical and professional courses which constitute the work of the other colleges.

### DEPARTMENTS

The College of Arts, Philosophy, and Science includes work in the following departments: American History and Political Science, Anatomy and Physiology, Astronomy, Bacteriology, Botany, Chemistry, Economics and Sociology, Education, English, European History, Geology, Germanic Languages and Literatures, Greek Language and Literature, Latin Language and Literature, Mathematics, Military Science and Tactics, Philosophy, Physical Education, Physics, Romance Languages and Literatures, Zoology and Entomology. The following departments also offer a limited amount of work as elective studies in the College of Arts, Philosophy, and Science: Architecture, Art, Civil Engineering, Domestic Science, Engineering, Drawing, Electrical Engineering, Mechanical Engineering, Mechanics, Metallurgy and Mineralogy.

### GRADUATE SCHOOL

The graduate instruction given in the College of Arts, Philosophy, and Science is organized in a Graduate School. A special bulletin describing the organization, admission requirements, and work of the Graduate School may be obtained on application to the Secretary of the University Faculty.

## THE LAKE LABORATORY

The University maintains a Lake Laboratory at Sandusky during the summer vacation, which is designed to provide opportunity for the investigation of the biology of the lake region, and for giving certain courses of instruction in the departments of Botany, Zoology, and Entomology. A new and commodious laboratory building, capable of accommodating at least one hundred students and investigators, is well provided with tables, dark rooms, aquaria, water, and gas. Microscopes and other apparatus are supplied from the University. Boats, collecting apparatus, dredges, seines, etc., are well supplied, and special attention is given to methods of collecting and to field work. For further information write for a special bulletin which may be obtained from the Secretary of the University Faculty.

COURSES IN BUSINESS ADMINISTRATION AND  
SOCIAL SERVICE

Students desiring to prepare themselves to pursue a business career or to engage in philanthropic work are invited to send for a special bulletin entitled Courses in Business Administration and Social Service.

## FACULTY AND INSTRUCTORS

WILLIAM OXLEY THOMPSON, D. D., LL. D., PRESIDENT of the University.

JOSEPH VILLIERS DENNEY, B. A., DEAN and Professor of English.

CHARLES A. BRUCE, B. A., Associate Professor of Romance Languages, and SECRETARY of the Faculty.

WILLIAM HENRY SCOTT, LL. D., Professor of Philosophy.

SAMUEL CARROLL DERBY, A. M., Professor of the Latin Language and Literature.

JOSIAH RENICK SMITH, A. M., Professor of the Greek Language and Literature.

BENJAMIN FRANKLIN THOMAS, Ph. D., Professor of Physics.

GEORGE WELLS KNIGHT, Ph. D., Professor of American History and Political Science.

ROSSER DANIEL BOHANNAN, B. Sc., C. E., E. M., Professor of Mathematics.

ALBERT MARTIN BLEILE, M. D., Professor of Anatomy and Physiology.

WILLIAM ASHBROOK KELLERMAN, Ph. D., Professor of Botany.

BENJAMIN LESTER BOWEN, Ph. D., Professor of Romance Languages and Literatures.

ALLEN CAMPBELL BARROWS, A. M., D. D., Professor of English.

WILLIAM MCPHERSON, Ph. D., Professor of Chemistry.

HERBERT OSBORN, M. Sc., Professor of Zoology and Entomology, and Director of the Lake Laboratory.

HENRY CURWEN LORD, B. Sc., F. R. A. S., Professor of Astronomy and Director of the Emerson McMillin Observatory.

\*CHARLES SMITH PROSSER, D. Sc., Professor of Geology.

JOHN ADAMS BOWNOCKER, D. Sc., Professor of Inorganic Geology, and Curator of the Museum.

ALFRED DODGE COLE, A. M., Professor of Physics.

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\*Absent on leave 1906-1907.

WILBUR HENRY SIEBERT, A. M., Professor of European History.

LEWIS ADDISON RHOADES, Ph. D., Professor of Germanic Languages and Literatures.

DAVID R. MAJOR, Ph. D., Professor of Education.

CHARLES BRADFIELD MORREY, B. A., M. D., Professor of Bacteriology.

JAMES EDWIN HAGERTY, Ph. D., Professor of Economics and Sociology.

EMILY E. BRACKEN, Professor of Art.

GEORGE WASHINGTON McCOARD, M. A., Associate Professor of Mathematics.

ARTHUR WINFRED HODGMAN, Ph. D., Associate Professor of the Classic Languages.

WILLIAM EDWARDS HENDERSON, Ph. D., Associate Professor of Chemistry.

JOSEPH RUSSELL TAYLOR, M. A., Associate Professor of English.

CHARLES WILLIAM FOULK, B. A., Associate Professor of Chemistry.

JOHN H. SCHAFFNER, M. Sc., Associate Professor of Botany.

JAMES STEWART HINE, B. Sc., Associate Professor of Entomology.

FRANCIS LEROY LANDACRE, B. A., Associate Professor of Zoology.

WALLACE STEDMAN ELDEN, Ph. D., Associate Professor of the Classic Languages.

MATTHEW BROWN HAMMOND, Ph. D., Associate Professor of Economics and Sociology.

WILLIAM LUCIUS GRAVES, M. A., Assistant Professor of English.

GEORGE H. MCKNIGHT, Ph. D., Assistant Professor of English.

HARRY WALDO KUHN, Ph. D., Assistant Professor of Mathematics.

FREDERICK EDWARD KESTER, Ph. D., Assistant Professor of Physics.

THOMAS HARVEY HAINES, Ph. D., Assistant Professor of Philosophy.

EDWIN F. CODDINGTON, Ph. D., Assistant Professor of Mechanics.

EDGAR S. INGRAHAM, Ph. D., Assistant Professor of Romance Languages.

GEORGE B. VILES, Ph. D., Assistant Professor of Germanic Languages and Literatures.

EDGAR HOLMES MCNEAL, Ph. D., Assistant Professor of European History.

CARSON SAMUEL DUNCAN, M. A., Assistant Professor of English.

FAYETTE AVERY MCKENZIE, B. S., Assistant Professor of Economics and Sociology.

ARTHUR ERNEST DAVIES, Ph. D., Assistant Professor of Philosophy.

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NATHANIEL W. LORD, E. M., Professor of Metallurgy and Mineralogy.

OLIVE JONES, B. A., Librarian.

WILLIAM T. MAGRUDER, M. E., Professor of Mechanical Engineering.

FRANCIS C. CALDWELL, A. B., M. E., Professor of Electrical Engineering.

MINNIE A. N. STONER, B. Sc., Professor of Domestic Science.

JAMES ELLSWORTH BOYD, M. S., Professor of Mechanics.

THOMAS EWING FRENCH, M. E., Professor of Engineering Drawing.

H. SHINDLE WINGERT, M. D., Director of Physical Education for Men.

GUSTAV A. ANDEREGG, A. M., Associate Professor of Electrical Engineering.

VIRGINIA BABB, B. Dom. Sc., Associate Professor of Domestic Art.

EDWARD ELSWORTH SOMERMEIER, G. Ph., Associate Professor of Metallurgy and Mineralogy.

KARL DALE SWARTZEL, M. Sc., Associate Professor of Mathematics.

CHARLES LINCOLN ARNOLD, M. Sc., Assistant Professor of Mathematics.

ROBERT F. EARHART, Ph. D., Assistant Professor of Physics.

WILLIAM LLOYD EVANS, Ph. D., Assistant Professor of Chemistry.

GEORGE D. HUBBARD, Ph. D., Assistant Professor of Geology.

JOHN C. DUNCAN, M. S., Assistant Professor of Economics and Sociology.

BERTHOLD A. EISENLOHR, M. A., Assistant Professor of the Germanic Languages and Literatures.

WALTER THOMSON PIERCE, Ph. D., Assistant Professor of the Romance Languages and Literatures.

JOHN B. PRESTON, M. A., Assistant Professor of Mathematics.

SAMUEL EUGENE RASOR, M. A., Assistant Professor of Mathematics.

JAMES RENWICK WITHROW, Ph. D., Assistant Professor of Chemistry.

J. WARREN SMITH, M. S., Lecturer in Meteorology.

BERTHA M. HOPKINS, M. A., Director of Physical Education for Women.

MAY THOMAS, Ph. D., Instructor in Germanic Languages.

MARY E. HASKELL, M. A., Instructor in Romance Languages.

FRANK KELTON BAILEY, Ph. D., Instructor of Physics.

ADOLF BUSSE, Ph. D., Instructor in German.

FREDERICA DETMERS, M. Sc., Instructor in Botany.

EUGENE F. McCAMPBELL, B. Sc., Instructor in Bacteriology.

FRANK W. MOODY, Ph. B., Instructor in Physics.

FRANK C. MCKINNEY, M. A., Instructor in English.

RAYMOND JESSE SEYMOUR, B. Sc., M. D., Instructor in Anatomy and Physiology.

CLARENCE C. VOGT, M. A., Instructor in Chemistry.

JAMES A. BEER, M. A., Assistant in Anatomy and Physiology.

JOHN R. CHAMBERLAIN, Assistant in Civil Engineering.

D. J. DEMOREST, Assistant in Metallurgy and Mineralogy.

JOHN M. KNOTE, M. A., Assistant in Chemistry.

SAMUEL MORRIS, B. A., Assistant in Chemistry.

C. A. PARK, Assistant in Astronomy.

GEORGE MENNE, Assistant in Physical Education for Men.

## ADMISSION

Applicants for admission must be at least 16 years of age. The College is open on equal terms to both sexes.

### UNIVERSITY ENTRANCE BOARD

The admission of students is in charge of the University Entrance Board, which determines the credits which shall be issued on all entrance examinations and certificates, and furnishes all desired information to applicants. Correspondence relating to admission should be addressed to the Entrance Board, Ohio State University, Columbus.

### MODES OF ADMISSION

There are two modes of admission—by examination and by certificate.

### ADMISSION BY EXAMINATION

The Entrance Board will conduct entrance examinations June 11 to 15 and September 10 to 14, 1907. A part of the examinations may be taken in June and the remainder in September. All applicants for admission who are not graduates of an accredited or recognized secondary school or approved preparatory school, or who do not possess certificates from the State Board of School Examiners, must take examinations for admission.

**SCHEDULE.**—Examinations will be from 8 to 12 a. m. and from 1 to 5 p. m.

#### TUESDAY

A. M.—Greek and Roman History, English History, General History.

P. M.—Composition, Rhetoric and Classics, Chemistry, Geology.

#### WEDNESDAY

A. M.—Algebra, German, English Grammar, Descriptive Geography.

P. M.—Plane Geometry, Physical Geography, Arithmetic.

## THURSDAY

A. M.—Civics, Solid Geometry, Zoology.  
P. M.—Beginning Latin, Cæsar, Astronomy.

## FRIDAY

A. M.—Physics, Physiology, Botany.  
P. M. U. S. History, French, English Literature.

## SATURDAY

A. M.—Virgil, Cicero.

## ADMISSION BY CERTIFICATE

Applicants may be admitted without examination on presentation of properly indorsed certificates from such secondary schools as have been accredited\* or recognized by the University, or from approved normal schools, or from the State Board of School Examiners under the following provisions:

(a) If from secondary schools, the certificate must show that the applicant is a graduate in good standing of the school issuing it; and also must state in detail the studies pursued, the text-books used, the amount of work done in each study, the amount of time devoted to it, and the fact that the applicant has passed in the work.

(b) Any entrance requirement not covered by a certificate must be met by examination.

Blank certificates may be obtained by addressing the Secretary of the Entrance Board. Certificates should be filled out and returned to the University as early as possible after the close of schools in June and in any event not later than September 7.

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\*Regarding accredited and recognized schools see page 22 and following.

## REQUIREMENTS BY UNITS

Applicants to be admitted to full standing must obtain credit by examination or certificate for fifteen units, chosen from the five groups which follow, subject to the restrictions stated therein. (A unit is a course of study covering a school year of not less than thirty-five weeks with four or five periods of at least forty-five minutes each per week.) No one under 21 years of age\* will be admitted on less than 13 units.

## (A) ENGLISH GROUP

Two units are required in this group. An applicant presenting one unit in this group will be admitted *conditionally*, if his arrearage in all of the groups does not exceed two units. All arrearages must be made good within two years after admission. Preparation in excess of two units in this group may be offered in lieu of the extra units of group (E).

English Composition and Rhetoric.....	1 unit
English Classics .....	1 unit
English Literature .....	1 unit

## (B) HISTORY GROUP

Two units are required in this group. An applicant presenting one unit in this group will be admitted *conditionally*, if his arrearage in all of the groups does not exceed two units. All arrearages must be made good within two years after admission. Preparation in excess of two units in this group may be offered in lieu of the extra units of group (E).

Civil Government .....	$\frac{1}{2}$ unit
United States History .....	$\frac{1}{2}$ unit
General History .....	$\frac{1}{2}$ or 1 unit
Greek and Roman History.....	$\frac{1}{2}$ or 1 unit
English History .....	$\frac{1}{2}$ unit

\*A person twenty-one years of age, or over, who desires to pursue a special line of work and does not desire to become a candidate for a degree, may be admitted by vote of the Executive Committee to such classes as he is qualified to enter; provided, that if he afterwards becomes a candidate for a degree he must pass the requirements for admission at least one year before the degree is conferred. See "Admission to Special Studies."

## (C) MATHEMATICS GROUP

Three units are required in this group. An applicant presenting *two and one-half* units in this group will be admitted *conditionally*, if his arrearage in all of the groups does not exceed two units. All arrearage must be made good within two years after admission.

Algebra (through quadratics) .....	1 unit
Algebra (beyond quadratics) .....	$\frac{1}{2}$ unit
Geometry (plane) .....	1 unit
Geometry (solid and spherical) .....	$\frac{1}{2}$ unit

## (D) SCIENCE GROUP

Two units are required in this group, including physics. An applicant presenting one unit in this group will be admitted conditionally, if his arrearage in all of the groups does not exceed two units. All arrearages must be made good within two years after admission. Preparation in excess of two units in this group may be offered in lieu of the extra units of group (E).

Physics .....	1 unit
Physical Geography .....	$\frac{1}{2}$ unit
Botany .....	$\frac{1}{2}$ unit
Chemistry .....	1 unit
Physiology .....	$\frac{1}{2}$ unit
Zoology .....	$\frac{1}{2}$ unit
Geology .....	$\frac{1}{2}$ unit
Astronomy .....	$\frac{1}{2}$ unit

## (E) FOREIGN LANGUAGE GROUP

Six units are required in this group; or two *extra* units from the preceding groups, and *four* units from this. A deficiency of *two* units is allowed in this group if the total arrearage in all of the groups does not exceed *two* units. All arrearages must be made good within two years after admission.

Latin .....	2 to 4 units
Greek .....	2 to 4 units
German .....	2 to 4 units
French .....	2 to 4 units
Spanish .....	2 to 4 units

The extent and character of the work required in each subject mentioned above is indicated on page 16 and following.

## ADMISSION TO SPECIAL STUDIES

Students who desire to pursue special lines of work and do not desire to become candidates for degrees, will be admitted on the following conditions:

1. The regular entrance requirements must be satisfied.
2. But applicants who are not less than twenty-one years of age after obtaining credit for the common English branches and for such other subjects as may be necessary to qualify them for the classes that they wish to enter, may, on the presentation of satisfactory reasons, be admitted to any class in the college; provided, that if any student who has been admitted on these conditions afterwards becomes a candidate for a degree, he shall pass the omitted entrance examinations at least twelve months before the degree is conferred.
3. On entering the college, students desiring to pursue special work are required to lay before the Executive Committee, for approval or modification, a written statement of the end they have in view, the studies proposed for the attainment of that end, and the probable period of attendance. Such students will be held as strictly to their accepted schemes of work as are the regular undergraduates to the course of study.
4. Permission to enter as special undergraduates will be refused to all who fail to give satisfactory evidence of definiteness of purpose, and will be withdrawn whenever the conditions on which it was granted cease to exist.

## ADMISSION TO GRADUATE WORK

A special bulletin devoted exclusively to the Graduate School may be obtained on application to the Secretary University Faculty.

DESCRIPTION OF SUBJECTS ACCEPTED FOR AD-  
MISSION TO THE COURSE LEADING  
TO A DEGREE

(A) ENGLISH GROUP

**ENGLISH COMPOSITION AND RHETORIC.** One unit. Each applicant must be able to write clear and correct English, and no applicant will be accepted in English whose work is seriously defective in spelling, punctuation, grammar, and paragraph structure. The proper preparation for this part of the requirement is practise in composition through the four preparatory years, with correction of themes by the teacher and revision by the pupil. Subjects for themes should be taken from the books prescribed for general reading below and also from the pupil's observation and experience. Practise should be afforded in writing narrative, description, exposition and argumentation. Applicants should be familiar with those principles of Rhetoric which are most helpful in elementary composition; viz., the principles of sentence structure, outlining, paragraphs, and choice of words. The amount and kind of work required is indicated in Scott and Denney's *Elementary Composition and Composition-Literature*.

**ENGLISH CLASSICS.** One unit. (a) A thorough knowledge of the subject-matter, form, and structure of Shakespere's *Macbeth*, Milton's *Lycidas*, *Comus*, *L'Allegro*, *Il Penseroso*; Burke's Speech on Conciliation with America (or Washington's Farewell Address and Webster's First Bunker Hill Oration); Macaulay's *Life of Johnson* (or Carlyle's *Essay on Burns*). (b) A general knowledge of the substance of ten books selected from the following groups: Group 1 (two to be selected), Shakespere's *As You Like It*, *Julius Cæsar*, *Merchant of Venice*, *Twelfth Night*, *Henry the Fifth*; Group 2 (one to be selected), Bunyan's *Pilgrim's Progress*, part 1; Bacon's *Essays*, *The Sir Roger de Coverley Papers* in the *Spectator*, Franklin's *Autobiography*; Group 3 (one to be selected), Chaucer's *Prologue*, selections from Spenser's *Faerie Queene*, Pope's *Rape of the Lock*, Goldsmith's *Deserted Village*, Palgrave's *Golden Treasury*, first series, books ii and iii, with especial attention to Dryden, Collins, Gray, Cowper, and Burns; Group 4 (two to be selected), Hawthorne's *House of the Seven Gables*, Thackeray's *Henry Esmond*, George Eliot's *Silas Marner*, Dickens' *A Tale of Two Cities*, Scott's *Ivanhoe*, Quentin Durward, Goldsmith's *Vicar*

of Wakefield, Mrs. Gaskell's Cranford, Blackmore's *Lorna Doone*; Group 5 (two to be selected), Emerson's Essays (selected), Ruskin's *Sesame and Lilies*, Irving's *Sketch Book*, Carlyle's *Heroes and Hero Worship*, DeQuincey's *Joan of Arc and the English Mail Coach*, Lamb's Essays of *Elia*; Group 6 (two to be selected), Palgrave's *Golden Treasury*, first series, book iv., with especial attention to Wordsworth, Keats, and Shelley, Coleridge's *Ancient Mariner*, Lowell's *Vision of Sir Launfal*, Scott's *Lady of the Lake*, Poe's Poems, Tennyson's *Gareth and Lynette*, *Lancelot and Elaine*, *The Passing of Arthur*, Arnold's *Sohrab and Rostum*, Byron's *Mazeppa*, *The Prisoner of Chillon*, Macaulay's *Lays of Ancient Rome*, and Browning's *Cavalier Tunes*, *Lost Leader*, *How They Brought the Good News*, *Evelyn Hope*, *Home Thoughts from Abroad*, *Home Thoughts from the Sea*, *Incident of the French Camp*, *The Boy and the Angel*, *One Word More*, Herve Riel, *Pheidippides*.

**ENGLISH LITERATURE.** One unit. A good knowledge of the leading facts in the history of English Literature, as given in Scudder's *English Literature*, Johnson's *History of English and American Literature* or the Introductions by Pancoast, Painter, Halleck, or Newcomer; together with the reading of representative works of literature. This may be offered in lieu of the work in English Classics.

#### (B) HISTORY GROUP

**CIVIL GOVERNMENT.** One-half unit. A good knowledge of the origin, principles, forms and powers of the national, state, and local governments is expected. Fiske's *Civil Government*, with a special study of the state from which the student comes, may serve to indicate the amount and kind of knowledge sought.

**UNITED STATES HISTORY.** One-half unit. A good knowledge of the main facts and features of American History, especially of the period since 1750, is expected. McLaughlin's *History of the American Nation*, Montgomery's *Student's American History* or Hart's *Essentials in American History* will serve to show the kind and amount of knowledge sought. No credit upon certificate will be accorded in this subject for work done below the ninth grade.

**GENERAL HISTORY or MEDIAEVAL AND MODERN HISTORY.** One unit or one-half unit. Adams' *European History* or Harding's

Essentials in Mediæval and Modern History, Myers' Mediæval and Modern History (revised), or an equivalent.

**GREEK AND ROMAN HISTORY.** One-half or one unit. Botsford's Ancient History for Beginners, or West's Ancient World, or Wolfson's Essentials in Ancient History, or an equivalent.

**ENGLISH HISTORY.** One-half unit. Higginson and Channing's English History for Americans, or Walker's Essentials in English History, or Cheyney's Short History of England, or an equivalent.

#### (C) MATHEMATICS GROUP

**ALGEBRA.** One unit. Taylor's Elements of Algebra, or an equivalent. Special attention should be given to the four fundamental operations (single and system), factoring, highest common factor, lowest common multiple, fractions and fractional equations, involution, evolution, surds, complex quantities, quadratic equations solved by factoring, by completing the square and the general formula.

**ALGEBRA.** One-half unit. A thorough review of the work above named, irrational equations, simultaneous quadratic equations, higher equations solvable by factoring, ratio, proportion, progressions, theory of exponents, binomial theorem for positive integral exponents, and use of five-place tables of logarithms. It is recommended that this work be taken in the last year of the high school course.

**GEOMETRY.** One unit. Venable, White, Wells, Wentworth, Beman and Smith, or an equivalent. Plane geometry with solution of originals.

**GEOMETRY.** One-half unit. Solid and spherical geometry, with solution of originals given in the text-books named above.

#### (D) SCIENCE GROUP

**PHYSICS.** One unit. Carhart and Chute's Elements, Gage's Elements, Avery's Elements, or an equivalent. Four recitation periods per week, including drill on simple numerical problems is recommended. A laboratory period of not less than two hours per week, to accompany the work of the text-book, is strongly urged, but is not required for the present.

**PHYSICAL GEOGRAPHY.** One-half unit. Tarr's, Dryer's, Davis', or Gilbert and Brigham's Physical Geography.

**BOTANY.** One-half unit. Equivalent of the work outlined in an elementary text-book (such as Coulter's, Bailey's, Bergin's, Andrews', Leavitt's, Kellerman's) and of a small hand book of the local flora (Kellerman's Spring Botany), which requires one-half year.

**CHEMISTRY.** One unit. McPherson and Henderson's Elementary Study of Chemistry, and "Exercises in Chemistry" arranged to accompany the same, or the equivalent. The course should consist of at least three recitations and four hours of laboratory work weekly.

**PHYSIOLOGY.** One-half unit. Martin's Human Body (Briefer Course). No credit will be accorded in this subject for work done below the ninth grade.

**ZOOLOGY.** One-half unit. Jordan, Kellogg, and Heath's Animal Studies; Kellogg's "Elementary Zoology"; Davenport's "Introduction"; or equivalents, with laboratory or field work.

**GEOLOGY.** One-half unit. Brigham's, Dana and Rice's (revised), Tarr's, or LeConte's may be used as texts. The recitations should be supplemented by study of the geological phenomena and formations found in the vicinity of the school.

#### (E) FOREIGN LANGUAGE GROUP

**LATIN.** First unit. Pronunciation (Roman method); Grammar (an exact knowledge of the inflections). Second unit. Cæsar, the first four books of the De Bello Gallico. Third unit. Cicero, six orations of Cicero, including Pro Lege Manilia. Fourth unit. Vergil, the first six books of the Aeneid with Prosody; and Prose Composition, Daniel, or Collar, or Bennett, or Dodge and Tuttle, entire. Latin cannot be continued as a university study unless at least three units are offered for admission. Pupils should be trained to the systematic use of the grammar from the outset.

**GREEK.** First unit. Grammar (Goodwin's preferred) and Prose Composition; or White's First Greek Book. Second unit. Reading: The first three books of Xenophon's Anabasis. A third unit

will be allowed for preparation in the fourth, fifth, and sixth books of the *Anabasis* and three books of Homer's *Iliad*, and a fourth unit for additional reading in Greek.

**GERMAN.** Two units. The pupil must possess a good pronunciation and be able to read or to translate at sight easy narrative prose, showing an exact and ready knowledge of the declensions and conjugations of the language. The ordinary principles of syntax and of word-order must be thoroughly mastered and such knowledge shown by the ability to translate easy sentences into German. Some three hundred pages of simple prose and poetry must be read.

Four units. In addition to the above, the applicant must have had two years more of instruction, including the reading of from four to five hundred pages of standard prose and at least one of Schiller's dramas, with not less than fifty pages of work in prose composition.

**FRENCH.** Two units. Applicants should be able to pronounce French accurately, to read at sight easy French prose, to put into French simple English sentences taken from the language of everyday life or based upon a portion of the French text read, and to answer questions on the rudiments of the grammar as defined below. During the first year the work should comprise: (1) Careful drill in pronunciation; (2) the rudiments of grammar, including the inflection of the regular and the more common irregular verbs, the plural of nouns, the inflection of adjectives, participles, and pronouns; the use of personal pronouns, common adverbs, prepositions, and conjunctions; the order of words in the sentence and the elementary rules of syntax; (3) abundant easy exercises, designed not only to fix in the memory the forms and principles of grammar, but also to cultivate readiness in the reproduction of natural forms of expression; (4) the reading of from 100 to 175 duodecimo pages of graduated texts, with constant practise in translating into French easy variations of the sentences read (the teacher giving the English), and in reproducing from memory sentences previously read; (5) writing French from dictation. During the second year the work should comprise: (1) The reading of from 250 to 400 pages of easy modern (nineteenth century) prose in the form of stories, plays or historical or biographical sketches; (2) constant practise, as in the previous year, in translating into French easy variations upon the texts read; (3) frequent

abstracts, sometimes oral and sometimes written, of portions of the text already read; (4) writing French from dictation; (5) continued drill upon the rudiments of grammar, with constant application in the construction of sentences; (6) mastery of the forms and use of pronouns, pronominal adjectives, of all but the rare irregular verb forms, and of the simpler uses of the conditional and subjunctive.

Four units. In addition to the above, the applicant should be able to read at sight, with the help of a vocabulary of special or technical expressions, difficult French not earlier than that of the seventeenth century; to write in French a short essay on some simple subject connected with the words read; to put into French a passage of easy English prose and to carry on a simple conversation in French.

SPANISH. Two units. Applicants should be able to pronounce Spanish accurately, to read at sight easy Spanish prose, to put in Spanish simple English sentences taken from the language of everyday life or based upon a portion of the Spanish text read, and to answer questions on the essentials of the grammar. The first year should be spent mainly on the grammar with easy reading and oral practise; the second devoted to reading good modern Spanish, with grammatical analysis and exercises in writing. The texts read should be chiefly narrative and conversational prose, including one or more prose dramas of the present age.

Four units. In addition to the above, the applicant should be able to read at sight, with the help of a vocabulary of special or technical expressions, difficult Spanish, whether prose or poetry; to write in Spanish a short essay on some simple subject connected with the works read, which shall show a thorough knowledge of syntax; to put into Spanish a passage of easy English prose, and to carry on a simple conversation in Spanish.

## LIST OF ACCREDITED AND RECOGNIZED SCHOOLS IN OHIO

Accredited schools are those four-year secondary schools whose courses of study have been found by inspection to be capable of satisfactorily preparing students for all colleges of the University.

Recognized schools are those three or four-year secondary schools whose courses of study are not capable of preparing students for all colleges of the University, but which have been found by inspection to cover satisfactorily 10 units of the requirements for admission.

These lists are subject to change from year to year as schools are revisited. Persons are advised, therefore, to consult the latest bulletins and catalogues of the University. A shows that a school is accredited; R, that it is recognized.

School	Superintendent	Principal
Akron, A	H. V. Hotchkiss	D. C. Rybolt
Alliance, R	J. E. Morris	J. W. Guthrie
Andover, R	S. A. Harbourt	Mary McDonald
Ashland, A	E. P. Dean	F. C. Clark
Ashtabula, A	R. P. Clark	Lillian Kurtz
Ashville, R	Stanley Lawrence	
Athens, A	F. S. Coultrap	Zella Foster
Baltimore, R	J. H. Horton	J. J. Wagner
Barberton, R	J. M. Carr	G. M. Korns
Barnesville, A	L. E. York	A. J. Gerber
Batavia, R		
Bedford, R	J. E. Pettit	Mary E. Hopkinson
Bellaire, A	J. R. Anderson	Alice Cunningham
Bellefontaine, A	J. W. MacKinnon	Annie A. Price
Bellevue, R	E. F. Warner	H. C. Bates
Bethel Township, Clark Co., R	Alfred Ross	Irene Dornblaser
Bethel Township, Miami Co., R	R. W. Crist	Walter Peoples
Bluffton, R		
Bowling Green, A	N. D. O. Wilson	
Bryan, A	J. W. Wyandt	Orville Smith
Bucyrus, A	J. J. Bliss	C. H. Miller
Caldwell, R	C. J. Foster	Patrick Henry
Cambridge, A	H. Z. Hobson	John H. Harding
Camden, R	J. L. Fortney	L. D. Brouse
Canal Dover, A	F. P. Geiger	A. J. Huffman
Canal Winchester, R	J. R. Clements	Alma Jennings
Canton, A	John K. Baxter	Chas. A. Armstrong
Carey, R	J. L. Lashey	Mattie Myers
Celina, R	S. Wilkin	J. W. Pogue

School	Superintendent	Principal
Chargrin Falls, R	D. M. McGlenen	E. C. Teare
Chardon, A	W. R. Davis	Jessie King
Chillicothe, A	M. E. Hard	W. H. Rice
Cincinnati—	F. B. Dyer	
Hughes, A		E. W. Coy
Walnut Hills, A		W. T. Harris
Woodward, A		E. D. Lyon
Cin. Tech. School, A		F. M. Ballou
Circleville, A		T. Otto Williams
Cleveland—		
Central, A	C. L. Boyer	Edward L. Harris
East, A	W. H. Elson	B. U. Rannells
Lincoln, A		James W. McLane
South, A		G. A. Reuteneck
West, A		C. L. Lynch
Glenville, A		H. H. Cully
Clintonville, R	S. T. Price	W. S. Jennings
Clyde, A	Arthur H. Wicks	Lela B. Gilbert
Collinwood, A	Frank P. Whitney	F. C. Rulon
Columbus—	Jacob A. Shawan	
Central, A		W. M. Townsend
East, A		F. B. Pearson
North, A		C. D. Everett
South, A		C. S. Barrett
Columbus School for Girls, A		Miss G. L. Jones
Columbus Grove, R	J. T. Begg	Miss Alice Gladden
Conneaut, R	Calvin T. Northrop	Louise E. Kahler
Corning, R		
Coshocton, A	Herman S. Piatt	W. L. Richer
Covington, R	L. J. Bennett	D. H. Sellers
Cumberland, R	G. E. Bell	W. S. Kingston
Cuyahoga Falls, R		Clinton Stauffer
Dayton, A	J. W. Carr	Chas. L. Loos, Jr.
Defiance, R	F. E. Reynolds	
Delaware, A	W. McK. Vance	Maude I. Myers
Delta, R	G. W. Hoffman	Viola Wilkins
DeGraff, R	N. H. Stull	
Dennison, R	W. H. Angel	A. J. Fry
East Cleveland, A	W. H. Kirk	
East Liverpool, A	R. E. Rayman	Florence Updegraff
Eaton, A	J. R. Beachler	John O'Leary
Elyria, A	W. R. Comings	H. M. Ebert
Euclid, R	H. D. Rankin	Mary E. Gould
Findlay, A	J. W. Zeller	J. F. Smith
Fort Recovery, R	James Ross	(Mrs.) J. A. Hunter
Fostoria, A	S. H. Layton	Ida McDermott
Fremont, A	J. E. Collins	E. A. Seibert
Friends' Boarding School (Barnes- ville), R		B. J. Thomas

## OHIO STATE UNIVERSITY

School	Superintendent	Principal
Galion, A	I. C. Guinther	Louise John
Gallipolis, A	H. E. Conard	Morris A. Henson
Garrettsville, R	E. F. Robison	
Geneva, R		
Georgetown, A	A. F. Waters	Susan Cockerill
Germantown, A	C. W. McClure	S. M. Heitz
Glendale, A	E. H. Foster	
Grand River Institute, A		O. J. Luethi
Granville, R	Lee W. McKinnon	Flora Hoover
Greenfield, A	Frank S. Alley	Roy Harris
Greenville, A.	W. S. Rowe	J. L. Selby
Grove City, R	A. C. Fries	C. F. Neiswander
Groveport, R	W. E. Sealock	Jennie Lewis
Hamilton, A	Darrell Joyce	W. P. Cope
Harmony Township (Clark Co.), R	David Neer	Carlton Henry
Hartwell, A	J. S. Trisler	J. C. Mauckley
Harrison, R	Thos. P. Pierce	Mary A. Curran
Highland, R	C. W. Johnson	Bessie L. Smith
Hillsboro, A	F. H. Warren	W. E. Arter
Home City, R	J. O. Falkenburg	Inez M. White
Ironton, A	S. P. Humphrey	T. Howard Winters
Jackson, A	J. E. Kinnison	J. C. Boyd
Jefferson, A	H. S. Foote	Mary I. Hoskins
Kent, R	A. B. Stutzman	Amy Herriff
Kenton, A	N. E. Hutchinson	H. E. Giles
Kingsville, R	P. S. Kingsbury	
Kirtland, R	E. L. Beck	
Lakeside, A	J. E. Ockerman	
Lakewood, A	J. M. H. Frederick	H. W. Kennedy
Lancaster, A	H. A. Cassidy	
Lebanon, R	J. M. Hamilton	L. F. Coleman
Leetonia, R	J. W. Moore	Wynonah Thompson
Leipsic, R	W. S. Sackett	Florence B. McClure
Lima, A	J. A. Davidson	S. Steffens
Lisbon, R	W. O. Lambert	W. C. Dyer
Lockland, A	S. T. Dial	Howard Hollenbach
Logan, A	H. F. Silverthorn	Katherine A. Bowlby
London, A	Wm. McClain	Marion Schlesinger
Lorain, R	A. C. Eldredge	D. J. Boone
Madison, R	Geo. C. Von Beseler	Lois Ellet
Madison Township (Pickaway Co.), R	C. M. Merry	(Mrs.) J. M. Bryan
Madisonville, A	J. R. Clark	O. P. Hause
Mad River Township (Enon Village), R	John B. Conrad	(Mrs.) E. W. Bradley
Malta, R	Chas. L. Van Cleve	Harland E. Hall
Mansfield, A		

School	Superintendent	Principal
Marietta, A	J. V. McMillan	C. E. Reed
Marion, A	H. L. Frank	F. D. Tubbs
Martins Ferry, A	F. W. Wenner	H. W. Paxton
Marysville, A	L. B. Demorest	Wm. I. Hill
Massillon, R	C. L. Cronebaugh	L. S. Hopkins
Mechanicsburg, A	W. T. Trump	J. W. Bowen
Medina, A	J. R. Kennon	Fannie E. Thomson
Miamisburg, A	Arthur Powell	Hardy Jackson
Middletown, A	T. F. Leonard	Geo. C. Stahl
Mt. Sterling, R	J. S. Alan	Cathryn Webber
Mt. Vernon, A	P. C. Zemer	R. E. Offenhauer
Napoleon, R	Aaron Grady	F. W. Leist
Nelsonville, A	J. D. Simkins	O. C. Jackson
Newark, A	C. F. Limbach	Edward P. Childs
New Bremen, R	J. M. Gordon	J. O. Erwin
New Lexington, R	W. H. Mitchell	G. A. Elliot
New London, A		Stella M. Townsend
New Lyme Institute, A	G. C. Mauer	H. C. White G. A. Wyly
New Philadelphia, A	W. C. Hutchinson	
New Richmond, R	F. J. Roller	W. H. C. Newington
New Vienna, R	B. O. Martin	S. L. Eby
Niles, R	A. D. Beechy	James E. Cole
North Baltimore, R	W. S. Cadman	W. W. McIntire
Norwalk, R	H. H. Hoffman	(Mrs.) Sarah R. Gill
Norwood, A	Ward Nye	Howard L. Rawdon
Oak Harbor, R		J. F. Peck
Oberlin, A		
Oberlin Academy, A		
Orrville, R		
Osborne, R	A. F. Darby	
Ottawa, R	G. J. Keinath	
O. S. & S.O. Home, R	E. L. Mendenhall	
Painesville, A	F. H. Kendall	A. H. Mabley
Pandora (Riley Township), R	P. D. Amstutz	C. E. Steiner
Perrysburg, R	C. E. Stinebaugh	Olive Woodard
Piqua, A	C. W. Bennett	F. E. C. Kirkendall
Plain City, R	J. S. Edwards	
Pleasant Ridge, R	F. L. Simmerman	
Pomeroy, R	C. T. Coates	
Port Clinton, R	C. S. Wheaton	
Portsmouth, A	J. I. Hudson	
Quaker City, R	W. G. Wolfe	Dollie, Hooper
Ravenna, R	E. O. Trescott	Lillian C. Smith
Reynoldsburg, R	Arthur L. Gantz	Frank Appel
Richwood, R	Forest B. Bryant	J. O. Eagleson
Ripley, R	R. B. Smith	W. J. Dodge
Sabina, R	M. J. Flannery	Wm. S. Coy
Salem, A	J. S. Johnson	W. E. Shrader
Salineville, R	Frank Linton	John W. Thalman
		T. C. Madden
		B. F. Stanton
		W. H. Hannum

## OHIO STATE UNIVERSITY

School	Superintendent	Principal
Sandusky, R	H. B. Williams	Geo. C. Dietrich
Shelby, A	S. H. Maharry	C. H. Winans
Sidney, A	Herbert R. McVay	Lee R. Dollenger
Solon, R	U. S. Earls	Charlotte Parker
Somerset, R	J. W. Davis	E. R. Beck
South Charleston, R		Stanley Zemer
Spencerville, R	Thos. J. Class	E. S. Bolton
Springfield, A	Carey Bogess	C. C. Patterson
Steubenville, A	E. M. Van Cleve	W. H. Maurer
St. Mary's, A	E. A. Hotchkiss	
St. Paris, R	D. C. Bryant	Florence Hunter
Tiffin, A	C. A. Krout	H. H. Frazier
Tippecanoe City, R	Orville Crist	E. R. Rike
Toledo, A	H. J. Eberth	Wm. B. Guitteau
Troy, A	C. W. Cookson	G. F. M. Mark
Uhrichsville, R	L. E. Everett	C. W. Jackson
Union City (Ind.), A		
Urbana, A	I. N. Keyser	H. N. Morton
Upper Sandusky, R	R. J. Kiefer	H. B. Mulholland
Utica, R	F. P. Householder	
Van Wert, A	J. P. Sharkey	Orrin Bowland
Wadsworth, R	H. H. Helter	W. A. Franks
Wapakoneta, R	C. E. Carey	Mary O. Conrath
Warren, A	James T. Tuttle	F. E. Ostrander
Washington C. H., A	C. J. Biery	D. L. Thompson
Wauseon, A	R. H. Kinnison	H. O. Hannah
Wellington, A	E. S. McCall	Elizabeth Day
Wellston, A	J. L. MacDonald	J. W. Whiteside
Wellsville, A	L. C. Dick	Ruby C. Mason
West Jefferson, R	F. B. Harris	
West Milton, R	W. A. Salter	Mary E. Thomas
West Unity, R	S. D. Shankland	Adah Weiser
Willoughby, R	C. S. McVey	Edward M. Ottis
Woodsfield, R	Chas. Haupert	
Wooster, A	Harvey S. Gruver	Laura B. Kean
Worthington, R	C. S. Fay	J. J. McDonald
Wyoming, A	Edwin B. Cox	Evelyn M. Prichard
Xenia, A	N. H. Chaney	Geo. J. Graham
Youngstown, A	W. D. Lash	Wells L. Griswold
Zanesville, A		Ira C. Painter

## ACCREDITED SCHOOLS OF OTHER STATES

COLORADO—Canon City; Cripple Creek; Denver—West Side, North Side; Durango; Golden; Grand Junction; Greeley; Idaho Springs; Leadville; Longmont; Loveland; Trinidad.

ILLINOIS—Alton; Aurora—East, West; Bloomington; Blue Island; Champaign; Chicago—Austin, Calumet, Curtis, Englewood, Hyde Park, Jefferson, John Marshall, Joseph Medill, Lake, Lake View, North West Div. (Tuley), R. T. Crane (Man. T'g), Robert A. Waller, South Chicago, Wendell Phillips; William McKinley, Chicago Heights; Clyde (Morton Tp.); Danville; Decatur; De Kalb Tp.; Dixon; Elgin; Elgin Academy; Evanston Academy (N. W. Univ.); Evanston Tp.; Francis W. Parker; Freeport; Harvey (Thornton Tp.); Highland Park (Deerfield Tp.); Joliet Tp.; Kankakee; Kewanee; La Grange Tp.; La Salle-Peru Tp.; Moline; New Trier Tp. (Kenilworth); Northwestern Medical Academy; Oak Park Tp.; Ottawa Tp.; Peoria; Polo; Pontiac Tp.; Princeton Tp.; Quincy; Rockford; Rock Island; Savanna Tp.; Springfield; Sterling Tp.; Streator Tp.; Waukegan Tp.

INDIANA—Elkhart; Evansville; Fort Wayne; Goshen; Howe School (Lima); Michigan City; Shortridge (Indianapolis); South Bend.

IOWA—Boone; Burlington; Cedar Rapids; Clinton; Corning; Council Bluffs; Davenport; Denison; Des Moines—East, North, West; Dubuque; Fort Dodge; Grinnell; Ida Grove; Iowa City; Keokuk; Le Mars; Marshalltown; Mason City; Missouri Valley; Oskaloosa; Ottumwa; Red Oak; Sheldon; Sioux City; Vinton; Washington; Waterloo—East, West.

KANSAS—Arkansas City; Fort Scott; Iola; Junction City; Kansas City; Lawrence; Leavenworth; Sumner Co. (Wellington); Topeka; Wichita.

MICHIGAN—Adrian; Albion; Alpena; Ann Arbor; Battle Creek; Bay City (East Side); Bay City (West Side); Benton Harbor; Benton Harbor Col. Inst.; Bessemer; Cadillac; Calumet; Coldwater; Detroit—Central, Delray, Eastern, Western, Woodmere, Home and Day, University; Dowagiac; Escanaba; Ferris Institute; Flint; Grand Rapids; Hancock; Holland; Houghton; Ionia; Ironwood; Iron Mountain; Ishpeming; Jackson; Kalamazoo; Lake Linden; Lansing; Manistee; Manistique; Marshall; Marquette; Menominee; Michigan Military Academy; Michigan Seminary; Monroe; Mus-

kegon; Mt. Clemens; Mt. Pleasant; Negaunee; Owosso; Pontiac; Port Huron; Saginaw (East Side); Saginaw (West Side); Sault Ste. Marie; South Haven; St. Johns; St. Joseph; Three Rivers; Traverse City; Wyandotte.

MINNESOTA—Albert Lea; Anoka; Austin; Crookston; Duluth Central; Faribault; Fergus Falls; Hastings; Little Falls; Mankato; Marshall; Minneapolis—Central, East, North; Montevideo; Northfield; Owatonna; Rochester; St. James; St. Paul—Central, Humboldt; Stillwater; Virginia; Willmar.

MISSOURI—Blees Military Academy (Macon); Booneville; Carrollton; Chillicothe; Drury College Academy; Kansas City—Central, Manual Training, Westport; Kemper Military School; Kirkwood; Macon; Marysville; St. Louis—Central, McKinley, Smith Academy, Yeatman; St. Joseph; Sedalia; Trenton; Webster Groves.

NEBRASKA—Beatrice; Brownell Hall; Fremont; Grand Island; Hastings; Lincoln Academy; Lincoln; Omaha; South Omaha; York.

NORTH DAKOTA—Fargo; Grand Forks.

SOUTH DAKOTA—Aberdeen; Deadwood; Mitchell; Watertown; Yankton.

WISCONSIN—Antigo; Appleton; Ashland; Baraboo; Beaver Dam (Wayland Academy); Beloit; Berlin; Chippewa Falls; Eau Claire; Elkhorn; Fond du Lac; Grand Rapids; Hartford; Janesville; Kenosha; La Crosse; Lake Geneva; Madison; Manitowoc (North); Marinette; Marshfield; Menomonie; Merrill; Milwaukee—East Division, South Division, West Division; Milwaukee-Downer Seminary; Oshkosh; Plymouth; Portage; Racine; Rabine Col. Grammar School; Reedsburg; Ripon; Sheboygan; Stevens Point; Superior, Blaine; Superior, Nelson Dewey; Tomah; Washburn; Waukesha; Waukesha (Carroll College Academy); Waupaca; Wausau; Wauwatosa; Whitewater.

## REQUIREMENTS FOR GRADUATION

## UNDERGRADUATE COURSES OF STUDY

The work of the College of Arts, Philosophy, and Science is organized on the group-elective system. Several of the groups correspond in their chief studies and learning aims to the "courses" \* formerly offered, but with much greater flexibility and much freer opportunities for election. Many other "courses" having equally specific aims are also provided in the groups. The groups, so far as at present arranged, number twelve. This number will be increased as reasonable demand may arise for new groups. The characteristic features of each group may be judged from its name which is made up of the names of the chief studies of the group. The groups at present recommended are given on pages 33 to 35.

About one-third of every student's curriculum is prescribed. Each student is required to lay sufficiently broad foundations, during the first two years, in English, in two other languages to be chosen by himself, in mathematics and one science, or in two sciences to be chosen by himself, and in history, economics, English, or philosophy. The remaining two-thirds of each student's work is elective; but in order to insure substantial results in the studies thus freely chosen, the student is required to continue two of his first-year studies (any two) through the second year, one of his second-year studies (any one) through the third year, and one of his third-year studies (any one) through the fourth year. In order to guard against the danger of too narrow or too wide a range of work, a maximum and a minimum number of departments is fixed in which the student is allowed to work during any one year. In the

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\*Arts or Classical, Latin Philosophy, Modern Language Philosophy, English Philosophy, General Science, Commerce and Administration, Education, Preparatory to Law, Preparatory to Medicine, Preparatory to Journalism.

first and second years the number of departments thus fixed is four or five; in the third and fourth years the number is three or four.

#### SUMMARY AND REQUIREMENTS

On satisfactory completion of 180 term hours under the restrictions prescribed below, the student will be recommended for the Degree of Bachelor of Arts.

The 180 term hours must include the following, amounting to 57 term hours:

- (a) English 1. (2-2-2) 6 term hours.
- (b) Two of the following languages: (8-8-8) 24 term hours.  
Greek 1 or 7, 8, 9; Latin 1, 2, 3;  
French 1 or 2; German 1 or 4; Spanish 1 or 2.
- (c) Mathematics 31, 32, 33, and 24. (6-6-6) 18 term hours or  
Two of the following: at least (6-6-6) 18 term hours.  
Mathematics 21, 22, 23; Physics 11 or 2;  
Chemistry 7; Botany 21, 22, 23; Zoology 1.  
Geology 17; Physiology 1.
- (d) One of the following: (3-3-3) 9 term hours.  
European History 1 or 14; American History 1;  
Political Science 1; Economics 30, 31, and 32;  
Psychology 1, and Philosophy 101 or 103; English 7 or 8.

For the remaining 123 term hours required for graduation the student may elect from any courses announced in this college (see page 37, and following) for which he is qualified.

#### FIRST YEAR

- (a) Fifteen or sixteen hours each term, chosen from the prescribed work indicated above, including English 1.
- (b) Cadet service (men). Hygiene and Physical Training (women); required throughout the first year.

## SECOND YEAR

(a) Fifteen hours each term. This must include all the prescribed work not done in the first year; the other work of the second year to be in three or four departments of which at least two shall be departments in which the student has worked during the first year.

(b) Cadet Service (men); Hygiene and Physical Training (women); required throughout the second year.

## THIRD YEAR

Fifteen hours each term in three or four departments, at least one to be a department in which the student has worked during the second year.

## FOURTH YEAR

Fifteen hours each term in three or four departments, at least one to be a department in which the student has worked during the third year.

## EXTRA HOURS

A student who has postponed a study in group (b) from the first to the second year, may take sixteen hours in the second year, and by the permission of the Executive Committee a student who has shown exceptional proficiency may be allowed to undertake from one to three extra hours. No extra hours will be granted to a first-year student, or to any student with conditions outstanding.

## RULE GOVERNING ELECTIONS

Each student enrolled in the College of Arts, Philosophy, and Science must file at the Registrar's office not later than June 1st of each year a complete statement of the courses he wishes to enter the following year. Blanks for this purpose may be obtained of the Registrar.

## STUDENT ADVISERS

The Faculty of Arts, Philosophy, and Science has provided a system of advisers, the chief objects of which are: (1) to assist the undergraduate in choosing studies that will result in a well-rounded course and will achieve most economically the purpose which the student has in view in his course; (2) to promote closer personal relations between students and instructors and thus to aid the student, so far as possible, in all matters connected with his university life. During his first term of residence each student is assigned by the Executive Committee to a member of the teaching force to whom he is cordially invited to resort for counsel as often as the need arises. Each student is required to secure the signature of his adviser to his election-card in June of each year, and to petitions, at any time during the year, for a change in work or for increase or diminution of work.

## FIRST YEAR OPTIONS

In order to meet the requirements for graduation, the first-year student must arrange his work on one of the following plans:

I. English; two languages; two sciences, or mathematics and one science, or mathematics alone; deferring until the second year the selection from group (d), above.

II. English; two languages; mathematics or science; one subject from group (d); deferring until the second year a second subject from group (c), above.

III. English; one language; two sciences, or mathematics and one science or mathematics alone; one subject from group (d); deferring until the second year the second language from group (b), above.

In order to assist the student in his choice of work for the first two years, more specific directions are given below in connection with various natural groupings of studies. *These groups are not mandatory.* The student may make

other combinatons than those suggested, provided his selection of studies fulfills one of the three options given above. In the second year many other combinations are possible. The time schedule, however, is arranged primarily to fit the combinations recommended. The days and hours at which each study is taught may be found by looking up that study on page 37 (et. seq.) of this Bulletin. The title of a group indicates the chief studies of that group.

### STUDY GROUPS

1. CLASSICAL. First year: Greek 1 or 7, 8, 9; Latin 1, 2, 3; English 1; either 6 hours in (c) or 3 hours in (c) and 3 hours in (d). Second year: Greek 7, 8, 9 or 10, 11, 12; Latin 4, 5, 6; begin or continue a modern language, a science and a study in Economics, History, Political Science or Sociology. Before choosing work in (c) or (d), read groups 4 to 12.

2. LATIN, MODERN LANGUAGE. First year; Latin 1, 2, 3; French 1 or 2, or German 1 or 4; English 1; either 6 hours in (c) or 3 hours in (c) and 3 hours in (d). Second year: Latin 4, 5, 6; French or German; English; begin or continue a science and a study in Economics, History, Political Science or Sociology. Before choosing work in (c) or (d), read groups 4 to 12.

3. MODERN LANGUAGES. First year: Begin or continue French and German. (*Not more than one new language should be begun in the first year.*) English 1; either 6 hours in (c) or 3 hours in (c) and 3 hours in (d). Second year: Continue French and German; begin or continue a science and a study in Economics, History, Political Science, or Sociology; add English 7 or 8. Before choosing work in (c) or (d), read groups 4 to 12.

4. GENERAL SCIENCE. First year: French 1 or 2 or German 1 or 4; Chemistry 1; Mathematics 21, 22, 23; English 1; 3 hours in (d). Second year: A second modern language; a study in Economics, English, History, Political Science or Sociology; one of the following: Astronomy, Chemistry, Physics; one of the following: Botany, Geology, Physiology, Zoology; the remaining time in Mathematics or Science. Students intending to specialize in Chemistry should continue that subject the second year of the course. Those who have Geology in view should take Geology 17 and 11, 12, 13 in their second year.

5. MATHEMATICS, PHYSICS, ASTRONOMY. First year: Mathematics 31, 32, 33, 24; French 1 or 2 or German 1 or 4; English 1; 3 hours in (d). Second year: Mathematics 41, 42, 43; Physics 2; Chemistry 1; English and a second modern language (German or French.) Third year: Astronomy 1; Physics 12; and either Astronomy 2 or Physics 3; and additional science (3 hours); English or History 2 or 3 hours; German or French unless each has been studied two full years. Instead of Mathematics 31, 32, 33, 24 in the first year, Chemistry 1 and Mathematics 21, 22, 23 may be chosen, and be followed by Mathematics in the second year.

6. BIOLOGICAL SCIENCES. First year: French 1 or 2, or German 1 or 4; Chemistry 1; Botany 21, 22, 23, or Zoology 31; English 1; 3 hours in (d). Second year: Botany; Zoology 31 or 2; Physiology 1; Geology 17 or Mathematics 21, 22, 23 or Physics 11; and a second modern language. Students preparing for medicine should take Zoology 1 in the first year and Zoology 2 and Physiology 1 in the second year.

7. ECONOMICS, HISTORY. First year: Include European History 1, 2, 3 or Economics 30, 31, 32; English 1; French 1 or 2, or German 1 or 4; 6 hours in (c). Second year: Include Economics 30, 31, 32, or 33; European History 1, 2, 3, or 14; American History 1 or Political Science 1; 4 hours in (b). In each of the third and fourth years include two courses in Economics and one in History, or two in History and one in Economics.

8. HISTORY, POLITICAL SCIENCE, ADMINISTRATION. First year: Include European History 1, 2, 3 or 14, or American History 1; English 1; 6 hours in (b), including French 1 or 2, or German 1 or 4; 3 hours in (c). Second year: Include Political Science 1 and the course in History not taken the first year, and Economics 33; 3 hours in (c). The student who has not a reading command of French or German should continue the modern language of the first year. In each of the third and fourth years include either two courses in History and one in Political Science, or one course in History and two in Political Science; and in one of these years Economics 42, 43.

9. GENERAL BUSINESS. First year: Include Economics 30, 31, 32; English 1; Geology 17; Mathematics 21, 22, 23; and one of the following: French 1 or 2, German 1 or 4, or Spanish 1 or 2. Second year: Include Economics 33; English 7 or 8; Chemistry 1,

or Physics 11 or 2; American History 1, or European History 1, 2, 3; begin or continue a modern language.

10. SOCIOLOGY, PHILOSOPHY. First year: Include Economics 30, 31, 32; English 1; Physiology 1; Zoology 1; and French 1 or 2, or German 1 or 4. Second year: Include Economics 33; English 7 or 8; Physiology 1 and Philosophy 101; American History 1 or European History 1, 2, and 3; begin or continue a modern language.

11. PHILOSOPHY, EDUCATION. First year: Follow suggestions in Study Group 1, 2, or 3, except that only three hours be taken in (c), and that Psychology 1 and Philosophy 101 be taken as the subject in (d). Second year: Include Philosophy 103, 104 and Education 1, 2 or 3; begin or continue a modern language, a science in (c) and a study in Economics, History, Political Science or Sociology.

12. GENERAL LITERATURE. First year: Continue both languages offered for admission; English 1; 3 hours in (c); European History 1, 2, 3. Second year. Begin or continue a modern language, a science and two courses in History, including European History 14; English 7 or 8. Take a course in Philosophy throughout the third year.

### THE ARTS-LAW COURSE

A candidate for the degree of Bachelor of Arts while registered in the College of Arts, Philosophy, and Science may also register in the College of Law as a candidate for the degree of Bachelor of Laws, *provided* that at the time of seeking such registration in the College of Law (1) he has 135 term hours to his credit in the College of Arts, Philosophy, and Science, including the requisite optional subjects, and exclusive of the credit hours in Military Drill and Physical Training, and (2) has been a student in the College of Arts, Philosophy, and Science of this University at least one year, and (3) has included (or with the further work in the College of Arts, Philosophy, and Science mentioned in the next paragraph shall complete) sufficient courses to amount to thirty term hours in one or more of the four subjects: American History, European History, Economics,

Political Science, exclusive of elementary courses in those subjects.

A student so registered in the two colleges must during his first year of double registration complete sufficient further work in the College of Arts, Philosophy, and Science to make his credits in that college aggregate 150 term hours, exclusive of the credit hours in Military Drill and Physical Training. When he has done this and has completed in the College of Law the first year of the course for the degree of Bachelor of Laws, he will be recommended for the degree of Bachelor of Arts; and when he has completed the second and third years of such course in the College of Law, he will be recommended for the degree of Bachelor of Laws.

Application to enter the combined course must be filed with the Dean of the Arts College before registration day at the beginning of the year in which the student is eligible to enter the combined work.

No credit in the College of Arts, Philosophy, and Science will be given for work done in the College of Law except as above provided, but regular fourth-year students in the former college may by special permission take a limited amount of the work in the College of Law without credit in the College of Arts, Philosophy, and Science.

The work of all students taking studies in the two colleges at the same time is under the jurisdiction of a joint committee, consisting of Professor Denney, Dean of the College of Arts, Philosophy, and Science; Professor Outhwaite, Dean of the College of Law; Professors Siebert and Page, and Associate Professor Bruce.

#### GRADUATE COURSES

A special bulletin devoted to the work of the Graduate School may be obtained on application to the Executive Office.

## ANNOUNCEMENT OF DEPARTMENTS

## AMERICAN HISTORY AND POLITICAL SCIENCE

(Office, Room 207, University Hall.)

PROFESSOR KNIGHT, PROFESSOR SPENCER, MR. ——.

## I. AMERICAN HISTORY.

1. POLITICAL HISTORY OF THE UNITED STATES. Three credit hours. Three terms. Sec. I, *M.*, *W.*, *F.*, at 8. Sec. II, *M.*, *W.*, *F.*, at 9. Sec. III, *M.*, *W.*, *F.*, at 1. This must precede all other courses in American History. Professor SPENCER, Mr. ——.

\*2. THE AMERICAN COLONIES, 1600-1763. Three credit hours. Three terms. *M.*, *W.*, *F.*, at 2. Should be preceded or accompanied by European History 14. Professor SPENCER.

\*4. THE SLAVERY STRUGGLE AND ITS RESULTS, 1800-1900. Three credit hours. Three terms. *M.*, *W.*, *F.*, at 11. Given biennially, alternating with course 6. Professor KNIGHT.

6. AMERICAN DIPLOMACY, FOREIGN RELATIONS, AND EXPANSION. Three credit hours. Three terms. *M.*, *W.*, *F.*, at 11. Given biennially, alternating with course 4. Professor KNIGHT.

\*7. POLITICAL PARTIES IN THE UNITED STATES, 1789-1900. Two credit hours. Three terms. *Tu.*, *Th.*, at 9. Given biennially, alternating with course 12.

\*8. HISTORICAL MATERIAL AND ITS USE. One credit hour. First and second terms. *W.*, at 3. Given biennially.

\*9. TOPICAL RESEARCH IN AMERICAN HISTORY. One credit hour. Third term. *W.*, at 3. Prerequisite, course 8. Given biennially.

10. SEMINARY FOR RESEARCH IN AMERICAN HISTORY AND POLITICAL SCIENCE. Two credit hours. Three terms. *Hours to be arranged*. Prerequisite, two courses in American History and at least one course in Political Science. Professor KNIGHT.

11. THE TEACHING OF AMERICAN HISTORY. One credit hour. Three terms. *W.*, at 3. This course must be taken by all who expect to be recommended for teacher's position in this subject. Professor KNIGHT.

12. THE REVOLUTIONARY AND CRITICAL PERIOD, 1763-1789. Two credit hours. Three terms. *Tu.*, *Th.*, at 9. Given biennially, alternating with course 7. Mr. ——.

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\*Not given in 1907-1908.

13. GRADUATE COURSES. Courses of investigation arranged at the beginning of each year to meet the needs of individual graduate students. Three to ten hours. Professor KNIGHT.

14. GRADUATE SEMINARY IN AMERICAN HISTORY AND INSTITUTIONS. Three terms. *Hours to be arranged.* Open only to graduate students. Professor KNIGHT.

## II. POLITICAL SCIENCE.

1. MODERN POLITICAL INSTITUTIONS. Three credit hours. Three terms. *M., W., F., at 9.* Prerequisite, American History 1, or European History 1, 2, and 3, or 14, or a substitute acceptable to the department. This course must precede all other courses in Political Science except 4 and 5. Professor SPENCER, or Mr. \_\_\_\_.

4. INTERNATIONAL LAW. Two credit hours. First and second terms. *Tu., Th., at 10.* Prerequisite, one course in European History and one course in American History. Professor KNIGHT.

5. HISTORY OF TREATIES AND MODERN DIPLOMACY. Two credit hours. Third term. *Tu., Th., at 10.* Prerequisite, course 4. Professor KNIGHT.

\*6. THE GOVERNMENT OF COLONIES AND DEPENDENCIES. Two credit hours. Three terms. *Tu., Th., at 11.* Given biennially, alternating with course 8. Professor KNIGHT.

8. MUNICIPAL GOVERNMENT AND PROBLEMS. Two credit hours. Three terms. *Tu., Th., at 11.* Given biennially, alternating with course 6. Professor KNIGHT.

9. ORIGIN AND DEVELOPMENT OF THE UNITED STATES CONSTITUTION. Two credit hours. Three terms. *Tu., Th., at 2.* Professor KNIGHT.

10. THEORIES OF GOVERNMENT, SOVEREIGNTY, AND POLITICAL LIBERTY. Two credit hours. Three terms. *M., F., at 10.* Given biennially, alternating with course 12. Professor SPENCER.

\*12. COMPARATIVE POLITICS. Two credit hours. Three terms. *M., F., at 10.* Given biennially, alternating with course 10. Professor SPENCER.

13. AMERICAN ADMINISTRATION. Two credit hours. Three terms. *Tu., Th., at 3.* Given biennially, alternating with course 14. Professor SPENCER, or Mr. \_\_\_\_.

\*14. ADMINISTRATIVE LAW. Two credit hours. Three terms. *Tu., Th., at 3.* Given biennially, alternating with course 13. Professor SPENCER.

15. ELEMENTS OF AMERICAN JURISPRUDENCE. Two credit hours. Three terms. *Tu., Th., at 9.* Professor SPENCER.

\*Not given in 1907-1908.

## ANATOMY AND PHYSIOLOGY

(Office, Room 12, Biological Hall.)

PROFESSOR BLEILE, DR. SEYMOUR, DR. BEER.

I. HUMAN ANATOMY AND PHYSIOLOGY. Three credit hours. Three terms. Sec. I, *M.*, *W.*, *F.*, at 8. Dr. SEYMOUR. Sec. II, *M.*, *Th.*, *F.*, at 10. Must be preceded or accompanied by a course in chemistry. Professor BLEILE.

3. CHEMICAL PHYSIOLOGY. Three credit hours. Third term. *Th.*, *F.*, 1 to 4. Professor BLEILE.

4. HISTOLOGY AND HISTO-CHEMISTRY. Five credit hours. Three terms. *M.*, *Tu.*, *W.*, 1 to 4. Professor BLEILE, Dr. BEER, Dr. SEYMOUR.

5. MICROSCOPY AND URINARY ANALYSIS. Two credit hours. Third term. Professor BLEILE and Dr. SEYMOUR.

9. PHYSIOLOGICAL LABORATORY. Three credit hours. Three terms. Professor BLEILE.

II. PHYSIOLOGICAL LABORATORY. Five credit hours. Three terms. Professor BLEILE.

## ANCIENT ART

(See Greek Language and Literature.)

## ASTRONOMY

(Office, The Emerson McMilin Observatory.)

PROFESSOR H. C. LORD, MR. J. WARREN SMITH, MR. PARK.

I. GENERAL ASTRONOMY. Two credit hours. Three terms. *Tu.*, *Th.*, at 1. Professor LORD.

2. ASTRONOMY, GEODESY, AND LEAST SQUARES. Three credit hours. Three terms. *M.*, *W.*, *F.*, at 11. Professor LORD and Mr. PARK.

3. METEOROLOGY. Two credit hours. Third term. *Tu.*, *F.*, at 4. Mr. SMITH.

7. ADVANCED ASTRONOMY. Three to five credit hours. Three terms. Prerequisite, calculus. Professor LORD.

## BACTERIOLOGY

(Office, Veterinary Laboratory Building.)

PROFESSOR MORREY, MR. MCCAMPBELL.

5. BACTERIOLOGY. Four credit hours. Three terms. Head of

department must be consulted before electing. Time to be arranged. Professor MORREY, Mr. McCAMPBELL.

First term. General. Making of media, physiological properties, cultures, staining methods.

Second and third terms. Special, along one of the following lines: Pathogenic, dairy, soil, sanitary, bacteriology, bacterial chemistry, especially enzymes.

6. ADVANCED BACTERIOLOGY. Five credit hours. Three terms. Time to be arranged. Professor MORREY, Mr. McCAMPBELL.

The following special lines are offered to properly qualified students:

- (a) Infection, immunity and serum-therapy. Preparation of toxins, anti-toxins and immune serums.
- (b) Pathogenic protozoa.
- (c) Special dairy bacteriology.
- (d) Special problems in soil bacteriology.
- (e) Special problems in bacterial chemistry.

These courses consist of lectures, conferences, review of the literature, and laboratory work.

## BOTANY

(Office, Botanical Hall.)

PROFESSOR KELLERMAN, ASSOCIATE PROFESSOR SCHAFFNER,

ASSISTANT PROFESSOR GRIGGS, MISS DETMERS.

### UNDERGRADUATE COURSES

3. SYSTEMATIC AND PHYSIOLOGICAL BOTANY. Four credit hours. First term. *M.*, *Tu.*, *F.*, at 10. Laboratory, *Th.*, 10 to 12. Professor KELLERMAN, Miss DETMERS.

4. MEDICAL BOTANY. Two credit hours. Second term. *M.*, *Tu.*, 10 to 12. Miss DETMERS.

9. DENDROLOGY. Two credit hours. First term. *M.*, *W.*, 10 to 12. Professor KELLERMAN.

10. DENDROLOGY. Two credit hours. Second term. Laboratory open daily, 8 to 12. Professor KELLERMAN.

11. ADVANCED LABORATORY WORK. Credit two to five hours. Three terms. Laboratory open daily 8 to 12. Professor KELLERMAN, Associate Professor SCHAFFNER, Assistant Professor GRIGGS.

16. LABORATORY WORK ON MEDICINAL PLANTS, ETC. Two to five credit hours. Laboratory open daily 8 to 12. Professor KELLERMAN and Miss DETMERS.

17. FOREST BOTANY. Four credit hours. Lectures, *Tu.*, *Th.*, *at 3*. Laboratory, *Tu.*, *Th.*, *1 to 3*. Prerequisite, *6, 7 and 8, or 21, 22 and 23*. Associate Professor SCHAFFNER.

18. NORMAL AND PATHOLOGICAL HISTOLOGY OF WOOD. Four credit hours. Lectures, *Tu.*, *Th.*, *at 3*. Laboratory, *Tu.*, *Th.*, *1 to 3*. Associate Professor SCHAFFNER.

19. FOREST ECOLOGY AND PATHOLOGY. Four credit hours. Lectures and Seminars, *Tu.*, *Th.*, *at 3*. Laboratory, *Tu.*, *Th.*, *1 to 3*. Associate Professor SCHAFFNER.

21. ECOLOGY. Three credit hours. First term. *Tu.*, *Th.*, *at 9*. Laboratory, *W.*, *2 to 4*. Associate Professor SCHAFFNER.

22. MORPHOLOGY AND PHYSIOLOGY. Continuation of course 21. Three credit hours. Second term.

23. SYSTEMATIC BOTANY. Continuation of course 22. Three credit hours. Third term.

24. LABORATORY AND FIELD WORK. Two or three credit hours. Three terms, daily, *8 to 12*. Professor KELLERMAN, Associate Professor SCHAFFNER, Assistant Professor GRIGGS.

25. LABORATORY WORK IN MORPHOLOGY. Three to five credit hours. Three terms. Laboratory open daily. Prerequisite, courses *6, 7, 8, or 21, 22, 23*. Associate Professor SCHAFFNER, Assistant Professor GRIGGS.

26. ADVANCED LABORATORY WORK IN HISTOLOGY, CYTOLOGY, AND MICROTECHNIQUE. Five credit hours. Three terms. Laboratory open daily. Prerequisite, 25. Associate Professor SCHAFFNER.

27. LABORATORY AND FIELD WORK IN SYSTEMATIC BOTANY. Three to five credit hours. Three terms. Laboratory open daily. Prerequisite, *6, 7, 8, or 21, 22, 23*. Professor KELLERMAN.

32. MINOR INVESTIGATIONS. One to three credit hours. Three terms. Prerequisite, *6, 7, 8, or 21, 22, 23*. Professor KELLERMAN, Associate Professor SCHAFFNER.

33. CURRENT LITERATURE. One to three credit hours. Three terms. Prerequisite, *6, 7, 8, or 21, 22, 23*. Professor KELLERMAN.

#### GRADUATE WORK.

28. RESEARCH WORK IN SYSTEMATIC BOTANY. Five credit hours. Three terms. Laboratory open daily. Prerequisite, *6, 7, 8, or 21, 22, 23*. Professor KELLERMAN.

29. RESEARCH WORK IN MORPHOLOGY AND CYTOLOGY. Five or ten credit hours. Three terms. Laboratory open daily. Prerequisite, *26 or equivalent*. Associate Professor SCHAFFNER.

30. MONOGRAPHIC WORK. Five or ten credit hours. Three terms. Prerequisite, 27. Professor KELLERMAN.

31. RESEARCH IN ECOLOGY. Five or ten credit hours. Three terms. Prerequisite, 25, or equivalent. Associate Professor SCHAFFNER.

## CHEMISTRY

(Office, Chemical Hall.)

PROFESSOR MCPHERSON, EMERITUS PROFESSOR NORTON, ASSOCIATE PROFESSORS HENDERSON, FOULK, ASSISTANT PROFESSORS EVANS, WITHROW, MR. VOGT, MR. KNOTE, MR. MORRIS, AND DEPARTMENT FELLOWS.

7. ELEMENTARY CHEMISTRY. Four credit hours. First and second terms. One lecture, one quiz, six hours laboratory work weekly. Lecture, *M.*, at 8; quiz, *F.*, at 8, 9, 10, 1, or 3. Laboratory *M.*, *Tu.*, 9 to 12; *Th.*, *F.*, 9 to 12; *M.*, *Tu.*, 1 to 4; *Th.*, *F.*, 1 to 4 or *W.*, 8 to 10; *S.*, 8 to 12. Assistant Professor EVANS, Mr. VOGT, Mr. MORRIS, and department fellows.

This course is arranged for students who have not presented chemistry as an entrance requirement. Students taking this course will follow with course 12, third term.

44. GENERAL CHEMISTRY. Four credit hours. First and second terms. First term: Lecture, *M.*, *W.*, at 3; quiz, *F.*, at 8, 9, 10, 1 or 3. Laboratory, *Tu.*, 9 to 12; *F.*, 9 to 12; *F.*, 1 to 4, or *S.*, 8 to 11. Second term: Lecture, *M.*, at 3; quiz, *F.*, at 8, 9, 10, 1, 3. Laboratory, *M.*, *Tu.*, 9 to 12; *Th.*, *F.*, 9 to 12; *Th.*, *F.*, 1 to 4, or *W.*, 8 to 10; *S.*, 8 to 12. Professor McPHERSON, Associate Professor HENDERSON, Assistant Professor EVANS, Mr. VOGT, Mr. MORRIS, and department fellows.

This course is arranged for students who have had an acceptable course in elementary chemistry in a secondary school. Students taking this course will follow with course 12, the third term.

12. QUALITATIVE ANALYSIS. Four credit hours. Third term. One lecture, one quiz, six hours laboratory work weekly. Prerequisite, Chemistry 7 or 44. Lecture, *M.*, 8 or 3; quiz and laboratory at same time as Chemistry 7. Assistant Professor EVANS, Assistant Professor WITHROW, Mr. VOGT, Mr. MORRIS, and department fellows.

This is a general introductory course in qualitative analysis.

21. ADVANCED GENERAL CHEMISTRY. Two credit hours. First, second, and third terms. Two lectures weekly. *Tu., Th., at 9.* Prerequisite, Chemistry 7 or 44. Associate Professor HENDERSON.

This course consists of reviews and extends the work in general chemistry.

37. QUALITATIVE ANALYSIS. Four credit hours. First term. One lecture, nine hours laboratory work weekly. Time to be arranged. Prerequisite, Chemistry 7 or 44. Associate Professor FOULK, Mr. KNOTE.

This is an elementary course in qualitative analysis similar to course 12.

20. QUANTITATIVE ANALYSIS. Four credit hours. First, second, and third terms. One lecture, nine hours laboratory work weekly. Lecture, *M., at 1.* Laboratory open afternoons. Prerequisite, Chemistry 12 or 37. Associate Professor FOULK, Mr. KNOTE.

First principles of gravimetric and volumetric analysis. This course must be accompanied by Chemistry 40, except by special permission of the instructor. It is also desirable that it should be accompanied by Chemistry 21.

40. CHEMICAL PROBLEMS. One credit hour. First and second terms. *Th., at 11.* Associate Professor FOULK.

Extended practise in the solution of chemical problems pertaining to analytical chemistry. This course is arranged to accompany Chemistry 20.

46. ORGANIC CHEMISTRY. Two credit hours. First, second, and third terms. Two lectures weekly. *Tu., Th., at 8.* Prerequisite, courses 20, and 21, except by special permission of the instructor. Professor MCPHERSON.

General course in organic chemistry. Whenever possible this course should be accompanied by Chemistry 47.

47. ORGANIC CHEMISTRY. Two or three credit hours. First, second, and third terms. Six or nine hours laboratory work weekly. Laboratory open afternoons. Professor MCPHERSON.

Preparation of typical organic compounds. This course must be accompanied or preceded by course 46.

15. SANITARY ANALYSIS. Four credit hours. Second term. Two lectures, four hours laboratory work weekly. Lectures, *Tu., Th., at 10.* Laboratory open afternoons. Prerequisite, Chemistry 20. Associate Professor FOULK.

A study of the methods of sanitary water analysis and the interpretation of results.

48. **QUALITATIVE ANALYSIS.** Advanced course. Three to five credit hours. First term. One lecture, six to twelve hours laboratory work weekly. Time to be arranged. Prerequisite, Chemistry 20. Associate Professor FOULK.

Extended work in general qualitative analysis; practise with insoluble substances; use of the spectroscope, etc. This course should be followed with course 49, second and third terms.

49. **QUANTITATIVE ANALYSIS.** Advanced course. Three to five credit hours. Second and third terms. One lecture, four to twelve hours laboratory work weekly. Time to be arranged. Prerequisite, Chemistry 20. Associate Professor FOULK.

Continuation of Chemistry 20; more difficult analytical methods.

30. **PHYSICAL CHEMISTRY.** Three credit hours. First and second terms. Three lectures weekly. *M., W., F., at 8.* Prerequisite, Chemistry 20, 21; also course 46, except by special permission of the instructor. Associate Professor HENDERSON.

A general course in the theory of chemistry.

50. **PHYSICAL CHEMISTRY.** Three credit hours. Third term. Nine hours laboratory work weekly. Time to be arranged with instructor. Prerequisite, Chemistry 30. Associate Professor HENDERSON.

A laboratory course in selected physical-chemical exercises.

41. **PHYSICAL CHEMISTRY.** Three credit hours. First, second, and third term. Nine hours laboratory work weekly. Laboratory open afternoons. Prerequisite, Chemistry 30. Associate Professor HENDERSON.

An extended course in physical-chemical exercises. While this course extends through the year, students may elect any one or two terms.

32. **INDUSTRIAL CHEMISTRY.** Four credit hours. First and second terms. Two lectures, six hours laboratory work weekly. *Tu., Th., at 8.* Laboratory, *W., Th., 1 to 4.* Prerequisite, Chemistry 20, 21, 46, 47. Assistant Professor WITHROW.

Industrial applications of chemistry.

35. **RARE ELEMENTS.** Three credit hours. Third term. Three lectures weekly. *M., W., F., at 8.* Prerequisite, Chemistry 20 and 21; also 46, except by special permission of the instructor.

71. **TECHNICAL ANALYSIS.** Four credit hours. Third term. One lecture, nine hours laboratory work weekly. Lecture, *Tu., at 11.* Laboratory open afternoons. Prerequisite, course 20. Associate Professor FOULK.

The chemical examination of various commercial products.

17. INORGANIC PREPARATIONS. Three credit hours. Third term. Nine hours laboratory work weekly. Laboratory open afternoons. Prerequisite, courses 20, 21, and the permission of the instructor. Associate Professor HENDERSON.

Practise in preparing some typical inorganic substances.

27. ORGANIC CHEMISTRY. Advanced course. Three to five credit hours. First, second, and third terms. Library and laboratory work. Time arranged with instructor. Prerequisite, courses 46 and 47. Professor MCPHERSON.

Extended practise in the preparation of typical organic compounds, their purification and analysis.

25. HISTORICAL CHEMISTRY. Three credit hours. Second term. Three lectures weekly. Time to be arranged with instructor. Prerequisite, permission of the instructor. Associate Professor HENDERSON.

This course is for advanced students only.

26. CHEMICAL SEMINARY. One credit hour. First, second and third terms. *W., at 11.*

Discussion of papers. For advanced and graduate students.

36. THE TEACHING OF CHEMISTRY. Two credit hours. Third term. Two lectures weekly. Time to be arranged with instructor. Prerequisite, permission of the instructor. Professor MCPHERSON.

72. APPLIED ELECTRO-CHEMISTRY. Three credit hours. Second and third terms. One lecture, six hours laboratory work weekly. Time to be arranged with instructor. Prerequisite, courses 20, 21, 46, 47. Assistant Professor WITHROW.

\*28. ORGANIC CHEMISTRY. Two credit hours. Third term. Two lectures weekly. Prerequisite permission of the instructor in charge. Professor MCPHERSON.

This course is arranged for graduate students and is offered biennially.

73. INORGANIC PREPARATIONS. Three credit hours. First, second, and third terms. Library and laboratory work. Time to be arranged with instructor. Prerequisite, permission of the instructor in charge. Associate Professor HENDERSON.

An extended course in the preparation of typical inorganic compounds, including those of the rare elements. The course is arranged for advanced students only. While the course extends through the year, the students may elect any one or two terms.

74. INORGANIC CHEMISTRY. Two credit hours. First term. Two lectures weekly. Time to be arranged. Prerequisite, permission of the instructor. Associate Professor HENDERSON.

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\*Not offered 1907-1908.

This course is arranged for graduate students only. Subject for 1907-1908, "Basic, double and complex salts."

75. ANALYTICAL CHEMISTRY. Two credit hours. Second term. Two lectures weekly. Time to be arranged. Prerequisite, permission of the instructor. Associate Professor FOULK.

This course is arranged for graduate students only and consists in a discussion of special topics in analytical chemistry. Subject for 1907-1908: "Selected topics pertaining to analytical chemistry, the atomic weights, adsorption, theory of indicators and precipitation."

76. ORGANIC CHEMISTRY. Two credit hours. Third term. Two lectures weekly. Time to be arranged. Prerequisite, permission of the instructor in charge. Assistant Professor EVANS.

This course is arranged for graduate students only and is offered biennially, alternating with course 28. Subject for 1907-1908: "Special chapters on organic nitrogen derivatives."

77. THE READING OF CHEMICAL LITERATURE. Two credit hours. First term. Time to be arranged. Prerequisite, German I. Associate Professor FOULK.

The main object of this course is to afford practise in the rapid reading of German chemical literature, the selections, being made with special reference to the technical terms of the science.

29. RESEARCH WORK. Five to ten credit hours. First, second and third terms. Library and laboratory work. Time arranged with instructor. Professor McPHERSON, Associate Professors HENDERSON, and FOULK, Assistant Professors EVANS and WITHROW.

## ECONOMICS AND SOCIOLOGY

(Office, Room 211, University Hall.)

PROFESSOR HAGERTY, ASSOCIATE PROFESSOR HAMMOND, ASSISTANT PROFESSOR MCKENZIE, ASSISTANT PROFESSOR DUNCAN,  
MR. GEPHART.

### ECONOMICS .

Students who plan to do considerable work in Economics should take courses 30, 31, and 32 as introductory to all other courses, and should take at the same time Geology 17. Those who intend to take but one year of work in Economics and Sociology should take Economics 33.

30. INDUSTRIAL AND SOCIAL HISTORY OF ENGLAND. Three credit hours. First term. Sec. I, *M.*, *W.*, *F.*, at 8; Sec. II, *M.*, *W.*, *F.*, at 9; Sec. III, *M.*, *W.*, *F.*, at 2. Open only to first and second-year stu-

dents. Assistant Professors MCKENZIE, DUNCAN, and Mr. GEPHART. Text-book, lectures, and assigned readings.

31. INDUSTRIAL AND SOCIAL HISTORY OF THE UNITED STATES. Three credit hours. Second term. Sec. I, *M.*, *W.*, *F.*, at 8; Sec. II, *M.*, *W.*, *F.*, at 9; Sec. III, *M.*, *W.*, *F.*, at 2. Open only to first and second year students. Assistant Professors MCKENZIE, DUNCAN, and Mr. GEPHART.

Text-book, lectures, and assigned readings.

32. COMMERCIAL AND ECONOMIC GEOGRAPHY. Three credit hours. Third term. Sec. I, *M.*, *W.*, *F.*, at 8; Sec. II, *M.*, *W.*, *F.*, at 9; Sec. III, *M.*, *W.*, *F.*, at 2. Open only to first and second year students. Assistant Professors MCKENZIE, DUNCAN, and Mr. GEPHART.

Text-book, lectures, and assigned readings.

33. PRINCIPLES OF ECONOMICS. Three credit hours. Three terms. Sec. I, *M.*, *W.*, *F.*, at 8; Sec. II, *M.*, *W.*, *F.*, at 9; Sec. III, *M.*, *W.*, *F.*, at 9; Sec. IV, *M.*, *W.*, *F.*, at 11. Not open to first year students. Should precede all courses in Economics and Sociology except Economics 30, 31, and 32, and Sociology 1, 2, and 3. Professor HAGERTY, Associate Professor HAMMOND, Assistant Professor DUNCAN and Mr. GEPHART.

Text-book, collateral readings, and individual investigations.

34. MONEY AND BANKING. Three credit hours. First term. Prerequisite, course 33. *M.*, *W.*, *F.*, at 2. Assistant Professor DUNCAN.

\*35. BANKING PRACTICE. Three credit hours. Second term. Prerequisite, course 34, *M.*, *W.*, *F.*, at 2.

\*36. THE MONEY MARKET. Three credit hours. Third term. Prerequisite, course 35. *M.*, *W.*, *F.*, at 2.

37. INDUSTRIAL ORGANIZATION. Three credit hours. First term. Prerequisite, course 33. *M.*, *W.*, *F.*, at 9. Associate Professor HAMMOND.

A study of the development and internal organization of modern manufacturing enterprises with some consideration of the forces determining their location. Lectures, individual reports, and visits of inspection to local plants.

38. CORPORATION FINANCE AND INDUSTRIAL CONSOLIDATION. Three credit hours. Second term. Prerequisite, course 34, or 37. *M.*, *W.*, *F.*, at 9. Associate Professor HAMMOND.

Methods of corporate organization and management, corporate

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\*Not given in 1907-1908.

capitalization and securities. The tendencies toward industrial consolidation, the forms and methods of the modern trust.

51. THE MONOPOLY PROBLEM. Three credit hours. Third term. Prerequisite, course 38. *M., W., F., at 9.* Associate Professor HAMMOND.

Monopolistic tendencies in modern industry. The problem of public regulation and control of industrial monopolies.

40. MERCANTILE INSTITUTIONS. Three credit hours. First and second terms. Prerequisite, course 33. *M., W., F., at 11.* Professor HAGERTY.

The evolution and organization of mercantile institutions with a study of the methods of commercial distribution and sale of products, including advertising, selling agencies, produce exchanges, etc.

41. COMMERCIAL CREDIT. Three credit hours. Third term. Prerequisite, course 40. *M., W., F., at 11.* Professor HAGERTY.

Mercantile agencies, credit men's associations, bankruptcy legislation, drafts, bills of exchange, bills of lading, and other credit instruments.

42. PUBLIC FINANCE. Two credit hours. First and second terms. Prerequisite, course 33. *Tu., Th., at 2.* Associate Professor HAMMOND.

Public expenditures, revenues and debts, financial organization and administration.

43. FINANCIAL HISTORY OF THE UNITED STATES. Two credit hours. Third term. Prerequisite, course 33. *Tu., Th., at 2.* Associate Professor HAMMOND.

A study of both the fiscal and monetary history of the country from colonial times to the present.

\*44. TRANSPORTATION. Two credit hours. Three terms. Prerequisite, course 33. *Tu., Th., at 8.*

45. SEMINARY IN ECONOMICS. Two credit hours. Three terms. Time to be arranged. Associate Professor HAMMOND and Assistant Professor DUNCAN.

A course of investigation and research open to graduates and such advanced undergraduates as receive special permission. Recommended to students who have had two or three years' work in Economics.

48. ACCOUNTING AND STATISTICS. Two credit hours. Three terms. Prerequisite, course 33. *Tu., Th., at 9.* Assistant Professor DUNCAN.

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\*Not given in 1907-1908.

An introduction to practical accounting, including the analysis and interpretation of business statements. Methods of statistical investigation and the use of statistics in commercial and industrial enterprises.

52. LABOR LEGISLATION. Two credit hours. First term. Prerequisite, course 33. *Tu., Th., at 8.* Associate Professor HAMMOND.

A study of the labor laws of the United States and the principal foreign countries, with some consideration of their economic and social causes and results.

39. LABOR ORGANIZATIONS AND EMPLOYERS' ASSOCIATIONS. Two credit hours. Second term. Prerequisite, course 52. *Tu., Th., at 8.* Associate Professor HAMMOND.

The methods by which laborers and employers organize to secure control of the labor market. Trade union policies and methods. Collective bargaining. Industrial arbitration.

53. REMUNERATION OF LABOR. Two credit hours. Three terms. Prerequisite, course 39. *Tu., Th., at 8.* Associate Professor HAMMOND.

A study of the wage system with its attempted modifications. Time, piece, and progressive wages, profit-sharing, labor copartnership.

54. INSURANCE. Two credit hours. Three terms. Prerequisite, course 33. *Tu., Th., at 10.* Mr. GEPHART.

Principles of life insurance and its economic and social significance. Kinds of companies, policies, and policy contracts. Public regulation of life insurance companies. Fire, marine, accident, old age and other forms of insurance.

55. MUNICIPAL ECONOMICS. Two credit hours. First and second terms. Prerequisite, course 33. *M., F., at 10.* Mr. GEPHART.

Growth of cities in population and functions. Economic and social activities and the problems of modern cities. Private versus public ownership and operation of public utilities. Experience of American cities compared with that of foreign municipalities.

56. MUNICIPAL FINANCE. Two credit hours. Third term. Prerequisite, course 55. *M., F., at 10.* Mr. GEPHART.

City expenditures; revenues from public industries, taxes, licenses, special assessments; city indebtedness, its growth and management; municipal statistics and accounts.

57. AMERICAN INDUSTRIES. Three credit hours. Second and third terms. Prerequisite, course 33. *M., W., F., at 2.* Assistant Professor DUNCAN.

Typical American industries described with reference to their

industrial processes and their accounting and administrative methods. Methods employed in these industries for determining costs of production, the reduction of labor costs, increasing output, and other managerial problems.

#### SOCIOLOGY

These courses are not open to first-year students. It is recommended that courses 1, 2, and 3 be preceded by Economics 30, 31, 32, or 33, and Psychology 1 or Zoology 1.

1. ELEMENTS OF SOCIOLOGY. Three credit hours. First term. Sec. I, *M., W., F.*, at 8; Sec. II, *M., W., F.*, at 1. Assistant Professor MCKENZIE.

A study of the fundamental principles of sociology. Text-book and lectures.

2. HISTORY OF THE FAMILY. Three credit hours. Second term. Prerequisite, course 1. Sec. I, *M., W., F.*, at 8; Sec. II, *M., W., F.*, at 1. Assistant Professor MCKENZIE.

A study of the matrimonial institutions of primitive society and the evolution of the family through the Greek, Roman, Mediæval, and Modern periods.

3. PRIMITIVE SOCIETY. Three credit hours. First term. Prerequisite, course 2. Sec. I, *M., W., F.*, at 8; Sec. II, *M., W., F.*, at 1. Assistant Professor MCKENZIE.

4. DEFENDENTS AND DEFECTIVES. Three credit hours. First term. Prerequisite, courses 1, 2, 3. *Tu., Th., F.*, at 10. Professor HAGERTY.

5. CRIMINOLOGY. Three credit hours. Second term. Prerequisite, course 4. *Tu., Th., F.*, at 10. Professor HAGERTY.

A study of criminality, the causes of crime, means of diminishing crime, prison management and prison reform.

6. ORGANIZED PHILANTHROPY. Three credit hours. Third term. Prerequisite, course 5. *Tu., Th., F.*, at 10. Professor HAGERTY.

A study of the various institutions or agencies organized to prevent dependency and crime, such as charity organizations, social settlements, the various church agencies, etc.

\*8. THE INDIAN. A study of primitive man. Three credit hours. First term. *M., W., F.*, at 9.

\*9. THE NEGRO. A study of tropic man. Three credit hours. Second term. *M., W., F.*, at 9.

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\*Not given in 1907-1908.

\*10. THE IMMIGRANT. Three credit hours. Third term. *M., W., F., at 9.*

7. SEMINARY IN SOCIOLOGY. Two credit hours. Three terms. Open to graduates and advanced undergraduates. Time to be arranged. Prerequisite, courses 1, 2, and 3. Professor HAGERTY and Assistant Professor MCKENZIE.

This course is recommended to students who have had one or two years' work in Sociology. At the other meetings sociological literature will be discussed.

11. SOCIAL REFORM AND SOCIALISM. Three credit hours. Three terms. Prerequisite, courses 1, 2, and 3, or Economics 33. *M., W., F., at 9.* Assistant Professor MCKENZIE.

Nineteenth century attempts at social reform, the theory of socialism, and the social function of the church.

#### GRADUATE COURSES IN ECONOMICS AND SOCIOLOGY

46. RESEARCH WORK. Two credit hours. Three terms. Hours to be arranged.

In this work, as far as possible, only original sources are used, and investigations are made from real life. The aim is to set before each student the accomplishment of a task of extending in some degree, however slight, the boundaries of economic and sociological knowledge. Meetings are arranged with the instructor throughout the year.

47. ADVANCED ECONOMICS AND SOCIOLOGY. One to ten credit hours. Three terms. Hours to be arranged with the students individually.

Open to undergraduates only on permission of the head of the department. The aim of these courses is to offer the students an opportunity to specialize to any degree he may desire along the various lines within the field of the department. Elections will naturally fall under the following heads: (a) Theoretical problems. (b) Historical problems. (c) Practical problems. (d) Finance. (e) Commerce. (f) Sociology—theoretical or practical. (g) Accounting and Statistics.

\*50. DISTRIBUTION OF WEALTH. Three credit hours. Three terms. This course is intended for graduates, but advanced undergraduates may be admitted by permission of the instructor. *M., W., F., at 11.*

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\*Not given in 1907-1908.

## EDUCATION

(Office, Room 407, University Hall.)

PROFESSOR MAJOR, ASSISTANT PROFESSOR HAINES.

1. EDUCATIONAL PSYCHOLOGY. Three credit hours. Three terms. *M., W., F., at 11.* Prerequisite, one year of college work. The work in this course will be based upon James' Talks on Psychology and Horne's Psychological Principles of Education. Professor MAJOR.

2. PRINCIPLES OF EDUCATION. Three credit hours. Three terms. *M., W., F., at 2.* Professor MAJOR.

3. HISTORY OF EDUCATION. Three credit hours. Three terms. *M., W., F., at 9.* Monroe's Text-book in the History of Education will be used in this course. Professor MAJOR.

4. MENTAL DEVELOPMENT. Two credit hours. Three terms. *M., F., at 10.* Professor MAJOR.

This course considers the development of the individual human mind, and will include a study of typical definitions of mental development, a discussion of human instincts, the theory of nascent periods, the development of intellectual processes.

5. SCIENCE OF EDUCATION. Three credit hours. Three terms. *M., W., F., at 11.* Prerequisite, Philosophy 101, Psychology 1, and Education 1, 2, or 3. Assistant Professor HAINES.

6. MODERN EDUCATIONAL SYSTEMS. Two credit hours. Three terms. *Tu., Th., at 2.* Assistant Professor HAINES.

7. HIGH SCHOOL ADMINISTRATION. Two credit hours. Three terms. *Tu., Th., at 11.* Prerequisite, two years of college work. Professor MAJOR.

This course will be concerned with the problems of the public high school; curriculum, organization, and administration.

\*8. EDUCATIONAL CLASSICS. Two credit hours. Three terms. *M., W., at 2.*

9. SEMINARY IN EDUCATION. Two credit hours. Three terms. Time to be arranged. Prerequisite, three years of college work. Professor MAJOR.

10. ADMINISTRATION OF PUBLIC EDUCATION. Two credit hours. Three terms. *Tu., Th., at 2.* Professor MAJOR.

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\*Not given in 1907-1908.

## ENGLISH

(Office, Room 116, University Hall.)

PROFESSOR DENNEY, PROFESSOR BARROWS, ASSOCIATE PROFESSOR TAYLOR,  
ASSISTANT PROFESSOR GRAVES, ASSISTANT PROFESSOR MCKNIGHT,  
ASSISTANT PROFESSOR DUNCAN, MR. MCKINNEY, MR. PARKER,  
MR. BLANCHARD.

## UNDERGRADUATE COURSES.

1. PARAGRAPH WRITING AND ANALYSIS OF PROSE. Two credit hours. Three terms. *Tu., Th., or W., F., at 8; Tu., Th., at 9, 10 or 1.* Professor DENNEY, Associate Professor TAYLOR, Assistant Professor GRAVES, Assistant Professor MCKNIGHT, Assistant Professor DUNCAN, Mr. MCKINNEY, Mr. PARKER, Miss RICHARDSON.

3. BRIEF MAKING AND ARGUMENTATION. Two credit hours. First, second and third terms. *Tu., Th., at 9, 10, 11; M., F., at 10; W., F., at 1.* Prerequisite, course 1. Professor DENNEY, Assistant Professor DUNCAN, Mr. MCKINNEY, Mr. BLANCHARD.

5. ADVANCED COMPOSITION. Two credit hours. First, second and third terms. *Tu., Th., at 11.* Prerequisite, course 1. Assistant Professor GRAVES.

7. INTRODUCTION TO ENGLISH LITERATURE. Three credit hours. Three terms. *M., W., F., at 8 or 9.* No prerequisite course. Either 7 or 8 may be chosen, but not both. Professor BARROWS.

8. GENERAL SURVEY OF ENGLISH LITERATURE. Three credit hours. Three terms. *M., W., F., 3 or 11.* No prerequisite course. Either 7 or 8 may be chosen, but not both. Assistant Professor GRAVES, Mr. ——.

10. FROM SPENCER TO MILTON. Two credit hours. First term. *Tu., Th., at 11.* Prerequisite, course 7 or 8. Assistant Professor MCKNIGHT.

11. FROM DRYDEN TO POPE. Two credit hours. Second term. *Tu., Th., at 11.* Prerequisite, course 7 or 8. Assistant Professor MCKNIGHT.

12. THE AGE OF JOHNSON. Two credit hours. Third term. *Tu., Th., at 11.* Prerequisite, course 7 or 8. Assistant Professor MCKNIGHT.

13. BURNS. Two credit hours. First term. *Tu., Th., at 2.* Prerequisite, course 7 or 8. Assistant Professor DUNCAN.

17. BYRON. Two credit hours. Second term. *Tu., Th., at 2.* Prerequisite, course 7 or 8. Assistant Professor DUNCAN.

21. SHELLEY AND KEATS. Two credit hours. Third term. *Tu., Th., at 2.* Prerequisite, course 7 or 8. Assistant Professor DUNCAN.

14. BURKE TO DE QUINCEY. Four credit hours. First term. *M., Tu., Th., F., at 10.* Prerequisite, course 7 or 8. Professor DENNEY.

15. CARLYLE AND RUSKIN. Four credit hours. Second term. *M., Tu., Th., F., at 10.* Prerequisite, course 7 or 8. Professor DENNEY.

16. ARNOLD, NEWMAN, AND PATER. Four credit hours. Third term. *M., Tu., Th., F., at 10.* Prerequisite, course 7 or 8. Professor DENNEY.

18. WORDSWORTH AND COLERIDGE. Three credit hours. First term. *M., W., F., at 9.* Prerequisite, course 7 or 8. Associate Professor TAYLOR.

19. TENNYSON. Three credit hours. Second term. *M., W., F., at 9.* Prerequisite, course 7 or 8. Associate Professor TAYLOR.

20. BROWNING. Three credit hours. Third term. *M., W., F., at 9.* Prerequisite, course 7 or 8. Associate Professor TAYLOR.

22. THE ENGLISH BIBLE. The Pentateuch and Earlier Histories. One credit hour. Three terms. *Th., at 8.* No prerequisite course. Professor BARROWS.

\*23. THE ENGLISH BIBLE. Later Histories, Poetry, and Prophecies. One credit hour. Three terms.

[24. THE ENGLISH BIBLE. The New Testament. One credit hour. Three terms. Not offered until 1909-10.]

26. HISTORY OF THE ENGLISH LANGUAGE. Two credit hours. First term. *M., F., at 10.* No prerequisite course. Assistant Professor McKNIGHT.

27. ENGLISH WORDS. Two credit hours. Second and third terms. *M., F., at 10.* No prerequisite course. Assistant Professor McKNIGHT.

28. OLD AND MIDDLE ENGLISH. Three credit hours. Three terms. *M., W., F., at 9.* No prerequisite course. Assistant Professor McKNIGHT.

30. LITERATURE BEFORE CHAUCER. Three credit hours. First term. *M., W., F., at 11.* Open only to juniors, seniors, and graduates. Assistant Professor McKNIGHT.

31. CHAUCER. Three credit hours. Third term. *M., W., F., at 11.* Open only to juniors, seniors, and graduates. Assistant Professor McKNIGHT.

32. ARTHURIAN STORY. Three credit hours. Second term. *M., W., F., at 11.* Open only to juniors, seniors, and graduates. Assistant Professor McKNIGHT.

\*Not given in 1907-1908.

35. SHAKESPEARE Three credit hours. Three terms. *M., W., F., at 11.* Prerequisite, course 7 or 8. Professor BARROWS.

36. THE DRAMA OTHER THAN SHAKESPEARE. Three credit hours. First and second terms. *M., W., F., at 2.* Prerequisite, course 7 or 8. Professor BARROWS.

37. MILTON. Epic and prose. Three credit hours. Third term. *M., W., F., at 2.* Prerequisite, course 7 or 8. Professor BARROWS.

38. THE NOVEL: Eighteenth Century. Four credit hours. First term. *M., Tu., Th., F., at 10.* Prerequisite, course 7 or 8. Associate Professor TAYLOR.

39. THE NOVEL: First Half of Nineteenth Century. Four credit hours. Second term. *M., Tu., Th., F., at 10.* Prerequisite, course 7 or 8. Associate Professor TAYLOR.

40. THE NOVEL: Last Half of Nineteenth Century. Four credit hours. Third term. *M., Tu., Th., F., at 10.* Prerequisite, course 7 or 8. Associate Professor TAYLOR.

43. POETICS. Three credit hours. First term. *M., W., F., at 3.* Prerequisite, course 3 or 5, and 7 or 8. Assistant Professor GRAVES.

44. SHORT STORY WRITING. Three credit hours. Second and third terms. *M., W., F., at 9.* Prerequisite, course 3 or 5, and 7 or 8. Assistant Professor GRAVES.

45. AMERICAN LITERATURE. Two credit hours. Three terms. *Tu., Th., at 8.* No prerequisite course. Associate Professor TAYLOR.

48. THE TEACHING OF ENGLISH. Two credit hours. Three terms. *W., 3 to 5.* Open only to seniors and graduates. Professor DENNEY.

49. SEMINARY. Two credit hours. Three terms. *M., at 4.* Open only to seniors and graduates. Must be elected for the year. Professor DENNEY.

#### GRADUATE COURSES.

61. THEORIES OF RHETORIC. *M., at 2.* Professor DENNEY.

62. OLD AND MIDDLE ENGLISH PHILOLOGY. *F., at 4.* Assistant Professor MCKNIGHT.

63. LITERARY PROBLEMS. *Tu., at 4.* Professor BARROWS.

64. COMPARATIVE CRITICISM. Topic for 1907-8. Current Literature. *Th., at 3.* Associate Professor TAYLOR.

#### ENTOMOLOGY

(See Zoology and Entomology.)

## EUROPEAN HISTORY

(Office, Room 204, University Hall.)

PROFESSOR SIEBERT, ASSISTANT PROFESSOR MCNEAL.

1. THE EARLY MIDDLE AGES. Three credit hours. First term. Sec. I, *M., W., F., at 9.* Professor SIEBERT. Sec. II, *M., W., F., at 1.* Assistant Professor McNEAL. Sec. III, *M., W., F., at 2.* Assistant Professor McNEAL. Sec. IV, *M., W., F., at 11.* Professor SIEBERT.

2. RENAISSANCE. Three credit hours. Second term. Sec. I, *M., W., F., at 9.* Professor SIEBERT. Sec. II, *M., W., F., at 1.* Assistant Professor McNEAL. Sec. III, *M., W., F., at 2.* Assistant Professor McNEAL. Sec. IV, *M., W., F., at 11.* Professor SIEBERT.

3. MODERN EUROPE. Three credit hours. Third term. Sec. I, *M., W., F., at 9.* Professor SIEBERT. Sec. II, *M., W., F., at 1.* Assistant Professor McNEAL. Sec. III, *M., W., F., at 2.* Assistant Professor McNEAL. Sec. IV, *M., W., F., at 11.* Professor SIEBERT.

4. POLITICAL AND CONSTITUTIONAL HISTORY OF ENGLAND. Three credit hours Three terms. *Tu., Th., F., at 10.* Prerequisite, course 14 or courses 1, 2, 3. Professor SIEBERT.

5. POLITICAL AND SOCIAL HISTORY OF GREECE TO THE ROMAN CONQUEST. Two credit hours. First term. *Tu., Th., at 9.* Assistant Professor McNEAL.

6. ROMAN HISTORY AND INSTITUTIONS TO THE END OF THE REPUBLIC. Two credit hours. Second and third terms. *Tu., Th., at 9.* Assistant Professor McNEAL.

7. PERIOD OF THE PROTESTANT REFORMATION. Three credit hours. First term. *M., W., F., at 2.* Prerequisite, courses 1, 2, and 3, or course 14. Professor SIEBERT.

8. THE FRENCH REVOLUTION AND NAPOLEONIC PERIODS, 1789-1815. Three credit hours. Second term. *M., W., F., at 2.* Prerequisite, courses 1, 2, and 3, or course 14. Professor SIEBERT.

9. HISTORY OF EUROPE IN THE NINETEENTH CENTURY. Three credit hours. Third term. *M., W., F., at 2.* Prerequisite, courses 1, 2, and 3, or course 14. Professor SIEBERT.

11. THE EASTERN QUESTION. Two credit hours. First term. *Tu., Th., at 11.* Prerequisite, courses 1, 2, and 3, or equivalent. Professor SIEBERT.

10. HISTORY OF EUROPEAN COLONIES. Two credit hours. Second and third terms. *Tu., Th., at 11.* Prerequisite, courses 1, 2, and 3, or course 14. Professor SIEBERT.

13. TEACHERS' COURSE IN EUROPEAN HISTORY. One credit hour. Three terms. Time to be arranged.

14. NARRATIVE HISTORY OF ENGLAND. Three credit hours. Three terms. *M., W., F., at 8.* Assistant Professor MCNEAL.

\*15. HISTORY OF NORTHEASTERN EUROPE. Two credit hours. First and second terms. *Tu., Th., at 11.* Prerequisite, courses 1, 2, and 3, or course 14.

\*16. EUROPE AND THE ASIATIC QUESTION. Two credit hours. Third term. *Tu., Th., at 11.* Prerequisite, courses 1, 2, and 3, or course 14.

21. ADVANCED WORK IN MODERN EUROPEAN HISTORY. Investigations of Special Topics. One to ten credit hours. Three terms. Open only by permission of instructor. Time to be arranged. Professor SIEBERT.

22. ADVANCED WORK IN MEDIAEVAL EUROPEAN HISTORY. One to ten credit hours. Three terms. Topics may be selected from the following list: (a) Mediæval Civilization. (b) Feudal Institutions. (c) Period of the Renaissance. (d) Study of Mediaeval Documents. Open only by permission of instructor. Time to be arranged. Assistant Professor MCNEAL.

## GEOLOGY

(Office, Orton Hall.)

PROFESSOR PROSSER, PROFESSOR BOWNOCKER, ASSISTANT  
PROFESSOR HUBBARD.

6. ECONOMIC GEOLOGY. Three credit hours. Second term. *M., W., F., at 11.* Prerequisite, courses 11 and 12. Professor BOWNOCKER.

11. INORGANIC GEOLOGY. Three credit hours. First term. *M., W., F., at 9.* Prerequisite, Chemistry 1. Professor BOWNOCKER.

12. HISTORICAL GEOLOGY. Three credit hours. Second term. Lectures, *M., W., F., at 9.* Prerequisite, course 11. Professor PROSSER.

13. FIELD GEOLOGY. Three credit hours. Third term. Lectures, *M., at 9.* Field trips, *S.* Laboratory open *W., at 9.* Prerequisite, courses 11 and 12. Professor PROSSER.

14. PALEONTOLOGY. Two to five credit hours. Three terms. Laboratory open *M., Tu., W., Th., F., 1 to 4.* Prerequisite, courses 11 and 12. Professor PROSSER.

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\*Not given in 1907-1908.

15. AERIAL GEOLOGY. Two to five credit hours. First and third terms. Field work, *S*. Laboratory open, *M.*, *Tu.*, *W.*, *Th.*, *F.*, *1 to 4*. Prerequisite, courses 11, 12, 13, and 14. Professor PROSSER and Assistant Professor HUBBARD.

17. PHYSIOGRAPHY. Three credit hours. Three terms. Open to Freshmen and Sophomores only. First term. Sec. I, *M.*, *W.*, *F.*, *at 1*. Field trips, Saturday morning. Professor BOWNOCKER. Sec. II, *M.*, *Tu.*, *Th.*, *at 10*. Field trips, Saturday morning. Assistant Professor HUBBARD. Second term. Sec. I, *M.*, *W.*, *at 1*. Professor BOWNOCKER. Sec. II, *Tu.*, *Th.*, *at 10*. Assistant Professor HUBBARD. Laboratory (both sections), *M.*, *Tu.*, *W.*, or *Th.*, *1 to 3:30*. Assistant Professor HUBBARD. Third term. Sec. I, *M.*, *W.*, *F.*, *at 1*. Field trips, Saturday morning. Professor BOWNOCKER. Sec. II, *M.*, *Tu.*, *Th.*, *at 10*. Field trips, Saturday morning. Assistant Professor HUBBARD.

Physiographic features of the earth's surface, the ocean and the atmosphere. Lectures and assigned readings, illustrated with models and lantern views. In the fall and spring terms, three field trips will be made, each trip taking the place of a recitation. In the winter term, the work will consist of two lectures, recitations or quizzes, and one laboratory period per week.

16. ADVANCED HISTORICAL GEOLOGY. Three to five credit hours. Three terms. Time to be arranged. Laboratory open *M.*, *Tu.*, *W.*, *Th.*, *F.*, *1 to 4*. Prerequisite, courses 11, 12, 13, and 14. Professor PROSSER.

18. GEOGRAPHIC GEOLOGY. Three credit hours. Time to be arranged. Prerequisite, courses 11 or 17. Professor BOWNOCKER.

19. PETROGRAPHY. Two credit hours. Three terms. Laboratory open *M.*, *Tu.*, *W.*, *Th.*, *F.*, *1 to 4*. Prerequisite, Chemistry 1. Metallurgy 2, and Geology 11. Professor BOWNOCKER.

20. RESEARCH WORK. Three to five credit hours. Three terms. Prerequisite, preceding courses in inorganic or historical geology. Professor PROSSER, Professor BOWNOCKER, or Assistant Professor HUBBARD.

21. ADVANCED PHYSIOGRAPHY. Three or more credit hours. Three terms. *M.*, *at 4*, and other hours to be arranged. Prerequisite, course 17, or courses 11, 12, and 13, or their equivalents. Assistant Professor HUBBARD.

Conferences and reports, reviews of literature, directed and independent excursions and laboratory work.

## GERMAN LANGUAGES AND LITERATURES

(Office, Room 317, University Hall.)

PROFESSOR RHOADES, ASSOCIATE PROFESSOR VILES, ASSISTANT PROFESSOR  
EISENLOHR, DR. MAY THOMAS, DR. BUSSE.

1. ELEMENTARY GERMAN. Four credit hours. Three terms. Sec. I, *Tu., W., Th., F., at 9.* Sec. II, *M., Tu., Th., F., at 10.* Sec. III, *M., Tu., Th., F., at 10.* Sec. IV, *M., T., Th., F., at 11.* Sec. V, *M., Tu., Th., F., at 11.* Sec. VI, *Tu., W., Th., F., at 2.* Sec. VII, *Tu., W., Th., F., at 3.* During the second and third terms one section will be discontinued and its place taken by a new one beginning the subject again.

2. SCIENCE READING. Four credit hours. Third term. Sec. I, *Tu., W., Th., F., at 8.* Sec. II, *Tu., W., Th., F., at 9.* Prerequisite, course 4 for the first and second terms. Assistant Professor EISENLOHR.

4. INTERMEDIATE GERMAN. Four credit hours. Three terms. Sec. I, *M., Tu., Th., F., at 10.* Sec. II, *M., Tu., Th., F., at 11.* Sec. III, *Tu., W., Th., F., at 2.* Sec. IV, *Tu., W., Th., F., at 8.* Sec. V, *Tu., W., Th., F., at 9.* Sections IV and V will be replaced in the third term by course 2.

\*9. CLASSICAL DRAMA. Three credit hours. Three terms. *M., W., F., at 2.* Prerequisite, course 4 or equivalent.

10. MODERN PROSE AND DRAMA. Three credit hours. Three terms. *M., W., F., at 3.* Dr. THOMAS. Prerequisite, course 4 or equivalent.

11. FAUST. Three credit hours. First and second terms. *M., W., F., at 3.* Prerequisite, course 9 or 10. Must be elected for both terms. Professor RHOADES.

12. PROSE COMPOSITION AND CONVERSATION. Two credit hours. Three terms. *W., F., at 2.* Prerequisite, course 4. Open only by permission and in connection with one of the advanced reading courses. The course is conducted in German. Assistant Professor EISENLOHR.

13. ADVANCED PROSE COMPOSITION. One credit hour. Three terms. *M., at 2.* Prerequisite, course 12. The course is intended for students who are preparing to teach and is conducted in German. Associate Professor VILES.

\*Not given in 1907-1908.

14. **GOTHIC.** Three credit hours. First term. *M., W., F., at 8.* The work is introductory to the historical study of either English or German. Associate Professor VILES.

15. **OLD HIGH GERMAN.** Two credit hours. Second and third terms. *M., W., at 8.* This, with course 17, forms a natural sequence to 14. Associate Professor VILES.

16. **MIDDLE HIGH GERMAN.** Two credit hours. Three terms. *Tu., Th., at 8.* Associate Professor VILES.

17. **OLD SAXON AND OLD NORSE.** One credit hour. Second and third terms. *F., at 8.* The work follows course 14 and should be taken in connection with 15. Associate Professor VILES.

\*18. **ROMANTIC WRITERS AND HEINE.** Three credit hours. Three terms. *M., W., F., at 3.* Prerequisite, course 4, or equivalent.

19. **RECENT AND CONTEMPORARY WRITERS.** Three credit hours. Three terms. *M., W., F., at 2.* Professor RHOADES. Prerequisite, course 4, or equivalent.

26. **SEMINARY.** (a) Studies in Modern Literature. Two credit hours. Three terms. *Tu., at 4.* The work is continuous throughout the year and must be so elected in order to count for an advanced degree. Professor RHOADES.

SEMINARY. (b). Two credit hours. Three terms. *W., at 4.* Associate Professor VILES, Assistant Professor EISENLOHR, Dr. BUSSE.

Intended for teachers and students preparing to teach: Elements of Phonology, Philology and Historical Grammar; study of difficult and disputed points in modern German syntax; methods of teaching with reports on books of reference, texts, etc. Both seminaries open by permission and to teachers as auditors.

28. **GERMAN LYRIC POETRY.** Two credit hours. Three terms. *Tu., Th., at 2.* Prerequisite, course 4. Assistant Professor EISENLOHR.

The course is continuous, but may be elected for a single term.

30. **HISTORY OF GERMAN LITERATURE SINCE THE REFORMATION.** Three credit hours. Third term. *M., W., F., at 3.* Professor RHOADES.

Graduates will present a special study of a single author or movement.

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\*Not given in 1907-1908.

## GREEK LANGUAGE AND LITERATURE

(Office, Room 307, University Hall.)

PROFESSOR SMITH, ASSOCIATE PROFESSOR HODGMAN, ASSOCIATE  
PROFESSOR ELDEN.1. ELEMENTARY GREEK. Four credit hours. Three terms. *M., Tu., Th., F., at 11.* Associate Professor ELDEN.7. XENOPHON: The Memorabilia of Socrates; Exercises in Greek Prose. Four credit hours. First term. *M., Tu., Th., F., at 11.* Prerequisite, course 1. Professor SMITH.8. HERODOTUS: Selections; with Studies in Greek History. Four credit hours. Second term. *M., Tu., Th., F., at 11.* Prerequisite, course 1. Professor SMITH.9. HOMER'S ODYSSEY. Selections from Books I-IX. Four credit hours. Third term. *M., Tu., Th., F., at 11.* Prerequisite, courses 7 and 8. Professor SMITH.10. LYSIAS: Eight Orations; with Studies in Attic Procedure. Three credit hours. First term. *Tu., Th., F., at 10.* Prerequisite, courses 7 to 9. Professor SMITH.11. PLATO: Apology, Crito and Phædo. Three credit hours. Second term. *Tu., Th., F., at 10.* Prerequisite, courses 7 to 10. Professor SMITH.12. HOMER'S ILIAD. Three credit hours. Third term. *Tu., Th., F., at 10.* Prerequisite, courses 7 to 11. Professor SMITH.13. THUCYDIDES: Book I or Book VII. Two credit hours. First term. *M., F., at 3.* Prerequisite, courses 7 to 12. Associate Professor HODGMAN.14. DEMOSTHENES: Olynthiacs and Philippics. Two credit hours. Second term. *M., F., at 3.* Prerequisite, courses 7 to 12. Associate Professor HODGMAN.15. GREEK LYRIC POETS, OR THEOCRITUS. Two credit hours. Third term. *M., F., at 3.* Prerequisite, courses 7 to 12. Associate Professor HODGMAN.16. EURIPIDES: Alcestis, with lectures on the Attic drama. Two credit hours. First term. *Tu., Th., at 3.* Prerequisite, courses 7 to 12. Associate Professor HODGMAN.17. SOPHOCLES: Oedipus Tyrannus. Two credit hours. Second term. *Tu., Th., at 3.* Prerequisite, courses 7 to 12. Associate Professor HODGMAN.18. AESCHYLUS: Agamemnon. Two credit hours. Third term. *Tu., Th., at 3.* Prerequisite, courses 7 to 12. Associate Professor HODGMAN.

19. EPIC POETRY. Two credit hours. First term. *W., F., at 2.* Prerequisite, courses 7 to 12. Professor SMITH.
20. ARISTOPHANES: The Birds. Two credit hours. Second term. *W., F., at 2.* Prerequisite, courses 7 to 12. Professor SMITH.
21. POST-CLASSICAL GREEK. Two credit hours. Third term. *W., F., at 2.* Prerequisite, courses 7 to 12. Professor SMITH.
22. ANCIENT ART. Lectures on Architecture. Two credit hours. First term. No prerequisite course. Professor SMITH.
23. ANCIENT ART. Lectures on Sculpture. Two credit hours. Second term. No prerequisite course. Professor SMITH.
24. ANCIENT ART. Lectures on Sculpture. Two credit hours. Third term. No prerequisite course. Professor SMITH.  
Courses 22, 23, and 24, are biennial, alternating with courses 32, 33, and 34. They will not be offered again until 1909-1910.
25. GREEK PHILOSOPHY. Two credit hours. First term. *Tu., Th., at 2.* Prerequisite, courses 7 to 12. Professor SMITH.
26. PLATO: Gorgias or Protagoras. Two credit hours. Second term. *Tu., Th., at 2.* Prerequisite, courses 7 to 12. Professor SMITH.
27. STUDIES IN NEW TESTAMENT GREEK. Two credit hours. Third term. *Tu., Th., at 2.* Prerequisite, courses 7 to 12. Professor SMITH.
28. HISTORICAL GRAMMAR. One credit hour. Three terms. Prerequisite, courses 7 to 12. Associate Professor HODGMAN.
29. RELATIONS OF GREECE AND PERSIA: The Panegyricus of Isocrates. Two credit hours. First term. Prerequisite, courses 7 to 12. Professor SMITH.
30. THE MACEDONIAN SUPREMACY: Arrian's Expedition of Alexander the Great. Two credit hours. Second term. Prerequisite, courses 7 to 12. Professor SMITH.
31. LATER GREEK EPICS: The Argonautica of Apollonius Rhodius. Two credit hours. Third term. Prerequisite, courses 7 to 12. Professor SMITH.
32. MEDIAEVAL ART. Lectures on Architecture. Two credit hours. First term. No prerequisite course. Professor SMITH.
33. MEDIAEVAL ART. Lectures on Sculpture. Two credit hours. Second term. No prerequisite course. Professor SMITH.
34. MEDIAEVAL ART. Lectures on Painting. Two credit hours. Third term. No prerequisite course. Professor SMITH.  
These courses, 32, 33, and 34, are biennial, alternating with courses 22, 23, and 24. They will not be offered again until 1908-1909.

35. PRIVATE LIFE OF THE GREEKS. Lectures. Two-credit hours. First term. No prerequisite course. Professor SMITH.

### LATIN LANGUAGE AND LITERATURE

(Office, Room 307, University Hall.)

PROFESSOR DERBY, ASSOCIATE PROFESSOR HODGMAN, ASSOCIATE PROFESSOR ELDEN.

N. B.—Except in case of unavoidable conflict, members of Latin 1, 2, 3, whose names begin with any letter from A to F inclusive, will be placed in Section I; those whose names begin with any letter from G to N inclusive, in Section II; all others in Section III.

1. CICERO: *De Senectute* and *De Amicitia*, or Selected Letters. Four credit hours. First term. Prerequisite, four units of preparatory Latin. Sec. I, *M.*, *Tu.*, *Th.*, *F.*, at 10. Associate Professor ELDEN. Sec. II, *M.*, *Tu.*, *Th.*, *F.*, at 11. Associate Professor HODGMAN. Sec. III, *Tu.*, *W.*, *Th.*, *F.*, at 2. Professor DERBY.

2. LIVY: Books 1, 2, 21, or 22. Four credit hours. Second term. Prerequisite, course 1. Sec. I, *M.*, *Tu.*, *Th.*, *F.*, at 10. Associate Professor ELDEN. Sec. II, *M.*, *Tu.*, *Th.*, *F.*, at 11. Associate Professor HODGMAN. Sec. III, *Tu.*, *W.*, *Th.*, *F.*, at 2. Professor DERBY.

3. HORACE: Odes. Four credit hours. Third term. Prerequisite, courses 1 and 2. Sec. I, *M.*, *Tu.*, *Th.*, *F.*, at 10. Associate Professor ELDEN. Sec. II, *M.*, *Tu.*, *Th.*, *F.*, at 11. Associate Professor HODGMAN. Sec. III, *Tu.*, *W.*, *Th.*, *F.*, at 2. Professor DERBY.

4. PLINY OR CICERO: Selected Letters. Three credit hours. First term. Sec. I, *M.*, *W.*, *F.*, at 3. Professor DERBY. Sec. II, *M.*, *W.*, *F.*, at 9. Associate Professor HODGMAN.

5. TACITUS: *Germania* and *Agricola*; or *Catullus*. Three credit hours. Second term. Sec. I, *M.*, *W.*, *F.*, at 3. Professor DERBY. Sec. II, *M.*, *W.*, *F.*, at 9. Associate Professor HODGMAN.

6. TERENCE: *Phormio*; *Plautus*, *Trinummus* or *Captivi*. Three credit hours. Third term. Sec. I, *M.*, *W.*, *F.*, at 3. Professor DERBY. Sec. II, *M.*, *W.*, *F.*, at 9. Associate Professor HODGMAN.

7. MARTIAL: Selected Epigrams. Two credit hours. First term. *M.*, *F.*, at 3. Professor DERBY.

8. SUETONIUS. Two credit hours. Second term. *M.*, *F.*, at 3. Professor DERBY.

9. TACITUS: *Historiæ* or *Annales*. Two credit hours. Third term. *M.*, *F.*, at 3. Professor DERBY.

10. THE ROMAN NOVEL: Petronius; Apuleius. Two credit hours. First term. *Tu., Th.*, at 9. Prerequisite, courses 1 to 3, and 4 to 6. Associate Professor HODGMAN.

11. SENECA: Medea; Dialogues. Two credit hours. Second term. *Tu., Th.*, at 9. Prerequisite, courses 1 to 3, and 4 to 6. Associate Professor HODGMAN.

12. CICERO: Tusculan Disputations. Two credit hours. Third term. *Tu., Th.*, at 9. Prerequisite, courses 1 to 3, and 4 to 6. Associate Professor HODGMAN.

\*13. SALLUST. Two credit hours. First term. *W., F.*, at 8. Prerequisite, courses 1 to 3, and 4 to 6.

\*14. EPIC POETRY. Two credit hours. Second term. *W., F.*, at 8. Prerequisite, courses 1 to 3, and 4 to 6.

\*15. HORACE: Satires. Two credit hours. Third term. *W., F.*, at 8. Prerequisite, courses 1 to 3, and 4 to 6.

\*16. HORACE: Epistles. Two credit hours. First term. *Tu., Th.*, at 3.

\*17. TACITUS: Annals. Two credit hours. Second term. *Tu., Th.*, at 3.

\*17a. LATE LATIN. Two credit hours. Third term. *Tu., Th.*, at 3.

18. TEACHERS' COURSE. Three credit hours. Three terms. *M., W., F.*, at 9. Prerequisite, courses 1 to 6. Associate Professor ELDEN.

19. LATIN PROSE COMPOSITION FOR TEACHERS. Three credit hours. Three terms. *M., Tu., F.*, at 10. Associate Professor HODGMAN.

Courses 18 and 19 are essential for those students who are preparing to teach Latin. Such students are strongly advised to take also at least one advanced reading course.

20. ROMAN PRIVATE LIFE. One credit hour. Three terms. *Tu., at 8.* Prerequisite, courses 1 to 3, and 4 to 6. Professor DERBY.

\*21. QUIZ AND REVIEW. One credit hour. Three terms. *M., at 2.* Prerequisite, courses 1 to 3, and 4 to 6. Professor DERBY.

This course will include brief outlines of Latin Literature, Ancient Geography, the field of Classical Philology and a review of some less familiar parts of Latin Grammar.

#### COURSES PRIMARILY FOR GRADUATES

30a. ROMAN PUBLIC LIFE. One credit hour. Three terms. *Th., at 8.* Professor DERBY.

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\*Not given in 1907-1908.

A study, partly from the sources, of the growth of the Roman constitution, and of the methods of Roman administration.

\*30. **LATIN LITERATURE.** One credit hour. Three terms.

\*31. **LATIN PHILOLOGY.** One credit hour. Three terms.

A brief survey of the field of Latin Philology.

32. **HISTORICAL LATIN GRAMMAR.** Sounds and Inflections. One credit hour. Three terms. Associate Professor HODGMAN.

This course treats of pronunciation, ablaut, vowel and consonant changes—especially vowel weakening—accent, inflection, and other similar topics essential to the understanding of the principles which govern the development of the Latin language.

33. **HISTORICAL LATIN GRAMMAR.** One credit hour. Three terms. Th., at 3. Associate Professor ELDEN.

Lectures on the problems connected with the origin and development of certain constructions in Latin syntax, a treatment along historical lines of the syntactic uses of the cases, moods, and tenses.

Courses 32 and 33 are deemed essential for those who make Latin a major or minor subject of study. Students with consent of instructor, may earn an additional credit hour in each.

\*34. **ADVANCED LATIN COMPOSITION.**

\*35. **PRO SEMINARY.** Textual Criticism; interpretation and criticism of Latin authors.

36. **ROMAN RELIGION.** One credit hour. Three terms. Lectures, and Fasti of Ovid. Associate Professor HODGMAN.

\*37. **LEGAL LATIN.**

A study of early Roman law, as given in Bruns' *Fontes*, and similar treatises; or of the Institutes of Justinian.

\*38. **MEDIAEVAL LATIN.**

39. **THE ELEMENTS OF EPIGRAPHY.** Two credit hours. Three terms. Professor DERBY.

40. **PALAEOGRAPHY.** One credit hour. Three terms.

Special topics related to the subjects named above may be pursued under supervision of the instructor and receive credit. Such lines of reading and individual investigation will usually be supplementary to the regular graduate courses.

The days and hours of class room exercises in the graduate courses will be arranged to suit the mutual convenience of the instructor and the students.

41. **ROMAN LITERATURE IN ENGLISH.** One credit hour. Three terms. Time to be arranged. Associate Professor ELDEN.

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\*Not given in 1907-1908.

Translation: Lectures on Roman Literature and its influence on modern writers. Reports on assigned readings, in translation of the masterpieces. Open to students of Latin, but especially intended for those who desire to become acquainted with the broader outlines of Roman literature.

42. ROMAN SATIRE. Open to graduates and advanced undergraduates. Two credit hours. Three terms. *W., F., at 8.* Associate Professor ELDEN.

Lectures and recitations. The history and development of Roman Satire; its influence on modern literature, especially of France and England. The authors studied will be Horace, Juvenal, and Persius, together with the fragments of the earlier satirists.

## MATHEMATICS

(Office, Room 314, University Hall.)

PROFESSOR BOHANNAN, ASSOCIATE PROFESSOR MCCOARD, ASSOCIATE PROFESSOR SWARTZEL, ASSISTANT PROFESSOR ARNOLD, ASSISTANT PROFESSOR KUHN, ASSISTANT PROFESSOR RASOR, ASSISTANT PROFESSOR PRESTON, MR. COX, MISS BAREIS.

21. COLLEGE ALGEBRA. Three credit hours. First term. *M., W., F., at 9, 11 or 1.* Professor BOHANNAN, Associate Professor McCOARD, Mr. Cox.

22. PLANE TRIGONOMETRY. Three credit hours. Second term. *M., W., F., at 9, 11 or 1.* Professor BOHANNAN, Associate Professor McCOARD, Mr. Cox.

23. ELEMENTARY ANALYTICAL GEOMETRY AND CALCULUS. Three credit hours. Third term. *M., W., F., at 9, 11 or 1.* Prerequisite, course 22. Professor BOHANNAN, Associate Professor McCOARD, Mr. Cox.

24. PROBLEMS ON ALL PAST WORK. One credit hour. Three terms. *F., at 10.* Assistant Professor ARNOLD.

28. ANALYTICAL GEOMETRY AND CALCULUS. Three credit hours. Three terms. Prerequisite, courses 21, 22, 23, or 31, 32, 33. Assistant Professor RASOR.

31. COLLEGE ALGEEERA. Five credit hours. First term. *M., Tu., W., Th., F., at 8, 9, 11, 1 or 2.* Professor BOHANNAN, Associate Professors McCOARD, SWARTZEL, Assistant Professors ARNOLD, KUHN, RASOR, PRESTON, Mr. COX, Miss BAREIS.

32. PLANE TRIGONOMETRY. Five credit hours. Second term.

*M., Tu., W., Th., F., at 8, 9, 11, 1 or 2.* Professor BOHANNAN. Associate Professors McCOARD, SWARTZEL, Assistant Professors ARNOLD, KUHN, RASOR, PRESTON, Mr. Cox.

33. ANALYTICAL GEOMETRY. Five credit hours. Third term. *M., Tu., W., Th., F., at 8, 9, 11, 1 or 2.* Prerequisite, Course 22 or 32. Professor BOHANNAN, Associate Professors McCOARD, SWARTZEL, Assistant Professors ARNOLD, KUHN, RASOR, PRESTON, Mr. Cox.

41, 42, 43. CALCULUS. Five credit hours. Three terms. *M., Tu., W., Th., F., at 8, 11 or 1.* Prerequisite, courses 21, 22, 23, or 31, 32, 33. Professor BOHANNAN, Associate Professors McCOARD and SWARTZEL, Assistant Professors ARNOLD, KUHN, RASOR, PRESTON, Miss BAREIS.

25. HIGHER MATHEMATICS. From one to ten hours a week may be selected from the following courses: (a) Determinants. (b) Modern Geometry. (c) Modern Higher Algebra. (d) Advanced Analytical Geometry. (e) Advanced Calculus. (f) Space Analytics. (g) Differential Equations. (h) Theory of Equations. (i) Higher Plane Curves. (j) Groups. (k) General Function Theory. (l) Elliptic Functions. (m) Potential Function. (n) Spherical Harmonies. (o) Mathematical Electricity. (p) Mathematical Optics. (q) General Mathematical Physics. (r) Higher Geodesy. (s) Infinite Series and Products. (t) The Teaching of Elementary Mathematics. Professor BOHANNAN, Associate Professor SWARTZEL, Assistant Professors ARNOLD, KUHN, RASOR and Miss BAREIS.

### MILITARY SCIENCE AND TACTICS

(Office, The Armory.)

CAPTAIN GEORGE L. CONVERSE, U. S. A.

The Military Department is open five days during each week of each term. Required of all students first and second year, unless excused by the Military and Gymnasium Board.

1. MILITARY DRILL. Three times per week. *M., Tu., W., at 4* during the fall and spring terms.

2. DRILL REGULATIONS. Lectures, Recitations on *Tu., and W.,* of each week. Winter term.

3. GALLERY PRACTISE. Winter term, 1 to 5.

### PHILOSOPHY

(Office, Room 321, University Hall.)

PROFESSOR SCOTT, ASSISTANT PROFESSOR HAINES, DR. DAVIES.

#### I. PHILOSOPHY.

101. INTRODUCTORY LOGIC. Three credit hours. Sec. I. Third

term. *M., W., F., at 9.* Professor SCOTT. Sec. II. First term. *M., W., F., at 9.* Text, Creighton's "Introductory Logic." Assistant Professor HAINES.

Practical work in the analysis and criticism of reasoning processes. Recitations and lectures.

103. ETHICS. Three credit hours. Third term. *M., W., F., at 11.* Professor SCOTT.

106. INTRODUCTION TO PHILOSOPHY. Three credit hours. First term. *M., W., F., at 2.* Prerequisite, Psychology 1, and Philosophy 101 or 103; or Psychology 1 and Philosophy 152. Professor SCOTT.

107. THEORY OF KNOWLEDGE. Three credit hours. Second term. *M., W., F., at 2.* Prerequisite, Philosophy 106. Professor SCOTT.

108. METAPHYSICS. Three credit hours. Third term. *M., W., F., at 2.* Prerequisite, Philosophy 106 and 107. Professor SCOTT

112. ADVANCED ETHICS. Two credit hours. Three terms. *Tu., Th., at 3.* Prerequisite, one year of elementary work, including Philosophy 103. Professor SCOTT.

115. AESTHETICS. Two credit hours. Three terms. *Tu., Th., at 2.* Open to first year students. Dr. DAVIES.

118. PHILOSOPHY OF SCIENCE. Two credit hours. Three terms. *Tu., Th., at 2.* Prerequisite, one year of elementary work, including Philosophy 101. Professor SCOTT.

119. PHILOSOPHY OF RELIGION. Two credit hours. Three terms. *Tu., Th., at 2.* Prerequisite, at least one year of elementary work. Professor SCOTT.

123. PHILOSOPHY OF MIND. Two credit hours. Three terms. *Tu., Th., at 11.* Prerequisite, Philosophy 151, and Psychology 1, or Philosophy 106 and Psychology 1. Dr. DAVIES.

125. THEORY OF MENTAL DEVELOPMENT. Three credit hours. *Tu., Th., F., at 10.* Prerequisite, Psychology 10. Assistant Professor HAINES.

Lectures, assigned readings, and reports. The larger theoretical questions which grow out of a consideration of the facts of mental development, such as the meaning of this development, and especially the meaning of imagination and inventiveness.

126. PHILOSOPHY OF EVOLUTION. Three credit hours. Third term. *Tu., Th., F., at 10.* Prerequisite, Philosophy 125. Assistant Professor HAINES.

Lectures, assigned reading, and reports. The philosophy of nature from an evolutionary point of view, and especially from the standpoint of mental development and evolution.

130. METHODS OF SCIENCE. Three credit hours. First term. *M., W., F., at 8.* Assistant Professor HAINES.

Lectures, assigned readings, and reports. An investigation of the processes by which the facts of science have been discovered. Each member of the class will contribute from his knowledge of methods of discovery in the science or sciences, with which he is familiar. Knowledge of elementary logic is presupposed.

141. ETHICAL SEMINARY. Two credit hours. Three terms. Prerequisite, one year of elementary work and Philosophy 112. Professor SCOTT.

142. PHILOSOPHICAL SEMINARY. Two credit hours. Three terms. Prerequisite, one year of elementary work and Philosophy 106, 107, and 108. Dr. DAVIES.

151. HISTORY OF ANCIENT PHILOSOPHY. Three credit hours. First term. *M., W., F., at 8.* Open to first year students. Dr. DAVIES.

152. HISTORY OF MODERN PHILOSOPHY. Three credit hours. Second and third terms. *M., W., F., at 8.* Open to first year students. Dr. DAVIES.

155. HISTORY OF CHRISTIAN PHILOSOPHY. Three credit hours. Three terms. *M., Th., F., at 10.* Open to first year students. Dr. DAVIES.

157. PLATO. Two credit hours. Three terms. *Tu., Th., at 3.* Prerequisite, one year of elementary work, including Philosophy 151. Dr. DAVIES.

\*159. ARISTOTLE. Two credit hours. Three terms. *Tu., Th., at 3.* Prerequisite, one year of elementary work, including Philosophy 151. Dr. DAVIES.

\*161. DESCARTES TO KANT. Three credit hours. Three terms. *M., W., F., at 11.* Prerequisite, one year of elementary work, including Philosophy 152. Dr. DAVIES.

166. KANT TO HEGEL. Three credit hours. Three terms. *M., W., F., at 11.* Prerequisite, one year of elementary work, including Philosophy 152. Dr. DAVIES.

168. RECENT AND CURRENT PHILOSOPHY. Three credit hours. Three terms. *M., Th., F., at 10.* Prerequisite, one year of elementary work, including Philosophy 152. Professor SCOTT.

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\*Not given in 1907-1908.

## II. PSYCHOLOGY.

(Psychological Laboratory Office, Room 404, University Hall.)

1. GENERAL PSYCHOLOGY. Three credit hours. Two terms. Open to first year students. Sec. I. First and second terms. *M., W., F., at 11.* Professor SCOTT. Sec. II. Second and third terms. *M., W., F., at 9.* Text, Angell's Psychology. Assistant Professor HAINES.

Lectures, recitations, simple experimentation and careful self-observation. Aims at an intimate knowledge of the facts of the mental life.

3. EXPERIMENTAL PSYCHOLOGY. Training in Psychological Methods. Three credit hours. Three terms. Lectures, *F., at 1.* Laboratory hours, *Th., 1 to 4, and F., 2 to 4,* or may be arranged. Prerequisites, Psychology 1, or Zoology 21. Assistant Professor HAINES.

7. ABNORMAL PSYCHOLOGY. Three credit hours. Second and third terms. *M., W., F., at 8.* Text, Defendorf's Clinical Psychiatry. Prerequisite, Psychology 1 or 3. Assistant Professor HAINES.

Lectures. Clinical studies at the Columbus State Hospital. Reports.

8. ANIMAL PSYCHOLOGY. Three credit hours. Third term *M., W., F., at 11.* Prerequisite, Psychology 1 or 3. Assistant Professor HAINES.

Lectures, assigned readings, and reports. A systematic tracing of the known order of mental development through the animal series.

10. SOCIAL PSYCHOLOGY. Three credit hours. First term. *Tu., Th., F., at 10.* Prerequisite, Psychology 1 or 3. (See Philosophy 125 and 126.) Assistant Professor HAINES.

Lectures, assigned readings, and reports. The psychology of personality and the psychological relations of persons in a group. The development of peoples and groups.

14. ADVANCED PSYCHOLOGY. Two credit hours. Three terms. *Tu., Th., at 9.* Prerequisite, Psychology 1 or 3. Dr. DAVIES.

31. RESEARCH IN EXPERIMENTAL PSYCHOLOGY. Two credit hours or more. Three terms. Prerequisite, Psychology 1 and 3. Assistant Professor HAINES.

Individual investigation of problems, leading to results which may find a place in the "Ohio State University Studies in Psychology," arranged for with the Monograph Supplement Series of the Psychological Review.

32. PSYCHOLOGICAL SEMINARY. Two credit hours. Three terms. *M., at 4.* Assistant Professor HAINES.

Individual investigations of problems in Psychological Theory. Subject for 1907—"The Psychology of the Feelings." Individual investigation of special problems in this field. Reports, discussions, and theses.

### PHYSICAL EDUCATION FOR MEN

(Gymnasium.)

DR. WINGERT, MR. MENNE.

1. GYMNASIUM. One credit hour. Three terms. A physical examination is required of all first year men during the early part of the fall term. Rational body building gymnastics and recreation, two hours per week during first year of student's residence at University, or until he has completed three terms of this work.

### PHYSICAL EDUCATION FOR WOMEN

(Gymnasium and Armory.)

DIRECTOR HOPKINS.

1. GYMNASIUM. One credit hour. Three terms. Required of all young women during the first year of their course. *M., Tu., Th., F., 9 or 11.*

2. GYMNASIUM. One credit hour. Three terms. Required of all young women during the second year of their course. *M., Tu., Th., F., 8 or 10.*

### PHYSICS

(Office, Room 24, Physics Hall.)

PROFESSOR THOMAS, ASSISTANT PROFESSOR KESTER, ASSISTANT PROFESSOR EARHART, MR. BAILEY, MR. MOODY.

2. GENERAL PHYSICS. Three credit hours. Three terms. *M., W., at 9, or 11.* One three-hour period; quiz and experimental work. Prerequisite, Mathematics 21, 22, 23, or 31, 32, 33. Professor THOMAS.

3. PROBLEMS. Two credit hours. Three terms. *Tu., Th., at 9.* Prerequisite, Mathematics 21, 22, 23, or 31, 32, 33. Professor THOMAS, Assistant Professor KESTER, Mr. BAILEY, Mr. MOODY.

## OHIO STATE UNIVERSITY

4. ELECTRICITY AND MAGNETISM. Three credit hours. First term. *M., Tu., Th., at 10.* Professor THOMAS.

11. GENERAL PHYSICS. Three credit hours. Three terms. Lecture, *W., at 11 or 2.* Laboratory, *Tu., Th., 8 to 10, or Th., F., 2 to 4.*

12. LABORATORY. Three to five credit hours. Three terms. *M., Tu., W., 1 to 4.* Prerequisite, course 2 (or may accompany course 2). Assistant Professor KESTER.

17. THE TEACHING OF PHYSICS. Three credit hours. Third term. Prerequisite, two terms of college work in physics. Time to be arranged.

18. THE PRODUCTION AND USE OF ELECTRIC CURRENTS. Theory and practise. Three credit hours. Third term. Time to be arranged Prerequisite, course 11, or course 2, and 6 hours in course 12. Professor THOMAS.

A non-technical course in dynamo currents, for teachers and for general science students.

## FOR ADVANCED UNDERGRADUATES AND GRADUATES.

13. ADVANCED LABORATORY. Three to five credit hours. Three terms. Prerequisite, course 2 or 11 and course 12. Professor THOMAS, Assistant Professor KESTER, Assistant Professor EARHART.

19. MOLECULAR PHYSICS. Four credit hours. Third term. *M., Tu., W., Th., at 8.* Prerequisite, Mathematics 28, or equivalent, and 15 credit hours in Physics. Assistant Professor EARHART.

14. THEORETICAL PHYSICS. (a) Advanced Light or (b) Radiation, or (c) Thermo Dynamics, or (e) Evolution of Experimental Physics. Three to five credit hours. Three terms. Prerequisite, course 2 and Calculus. Professor THOMAS, Assistant Professor KESTER.

16. PHYSICAL SEMINARY. One credit hour. Three terms. Prerequisite, a year of college work in physics.

## FOR GRADUATES.

15. RESEARCH LABORATORY. Three to five credit hours. Three terms. Prerequisite, two years of laboratory work in physics. Professor THOMAS, Assistant Professor KESTER, Assistant Professor EARHART.

## PHYSIOLOGY

(See Anatomy and Physiology.)

## POLITICAL ECONOMY

(See Economics and Sociology.)

## POLITICAL SCIENCE

(See American History and Political Science.)

## PSYCHOLOGY

(See Philosophy.)

## RHETORIC AND ENGLISH LANGUAGE

(See English.)

## ROMANCE LANGUAGES AND LITERATURES

(Office, Room 305, University Hall.)

PROFESSOR BOWEN, ASSOCIATE PROFESSOR BRUCE, ASSISTANT PROFESSOR  
INGRAHAM, ASSISTANT PROFESSOR PEIRCE, MR. ——.

## I. FRENCH.

1. ELEMENTARY FRENCH. Four credit hours. Three terms. Grammar: Fraser and Squair's, or equivalent. Reader: Aldrich and Foster's or Bowen's First Scientific. Historical and narrative prose; one or more prose comedies. Sec. I, *M.*, *Tu.*, *Th.*, *F.*, at 9 (Arts only). Sec. II and III, *M.*, *Tu.*, *Th.*, *F.*, at 10. Sec. IV, *M.*, *Tu.*, *Th.*, *F.*, at 11 (Ag. and Engin. only). Sec. V and VI, *Tu.*, *W.*, *Th.*, *F.*, at 2 Sec. VII, *Tu.*, *W.*, *Th.*, *F.*, at 3. All instructors in the department teach one or more sections of this course.

Stress laid upon the acquisition of a correct pronunciation, after which the energy of the student is directed toward the attainment of a full and accurate reading knowledge of the language. Grammar and composition made to contribute to this end. Sight reading emphasized.

2. MODERN FRENCH LITERATURE. Four credit hours. Three terms. Sec. I, *M.*, *Tu.*, *Th.*, *F.*, at 10. Sec. II, *M.*, *Tu.*, *Th.*, *F.*, at 11. Sec. III, *Tu.*, *W.*, *Th.*, *F.*, at 1. Prerequisite, course 1, or equivalent. Associate Professor BRUCE, Assistant Professor PEIRCE, Mr. ——.

The study of the literature as such now taken up. The work of the year deals with the following subjects: (1) Contes; (2)

The Novel (Balzac or Hugo); (3) Lyric poetry (Bowen's Modern French Lyrics); (4) Romantic drama (Hugo). Prose composition. Systematic attention given to syntax and idiom. Lectures supplement the work. Private reading required.

3. SCIENCE READING. Four credit hours. Third term. *Tu., W., Th., F., at 2.* Prerequisite, course 2, first and second terms. Assistant Professor PEIRCE.

A course of rapid reading introductory to the vocabulary of scientific literature.

\*4. FRENCH COMEDY OF THE SEVENTEENTH CENTURY. Three credit hours. First term. Given biennially, alternating with course 16. Prerequisite, courses 1 and 2.

Study of the growth of French Comedy, with work centering upon Molierè (three plays) and Regnard.

\*5. FRENCH TRAGEDY. Three credit hours. Second term. Given biennially, alternating with course 17. Prerequisite, courses 1 and 2.

Corneille, Racine and Voltaire. Critical study of *Le Cid*, *Andromaque*, *Æsther*, and *Zaire*.

\*6. SEVENTEENTH CENTURY PROSE. Three credit hours. Third term. Given biennially, alternating with course 18. Prerequisite, courses 1 and 2.

Critical study of Descartes, Pascal, La Bruyère and others. Warren's Selections.

7. ADVANCED PROSE COMPOSITION. One credit hour. Three terms. *Tu., at 10.* Prerequisite, courses 1 and 2. Professor BOWEN.

Cameron's French Composition, followed by other selections. Dictation. Conversation.

\*8. PROSE OF THE ROMANTIC PERIOD. Two credit hours. First term. Given biennially, alternating with course 11. Prerequisite, courses 1 and 2.

\*9. RECENT FRENCH PROSE. Two credit hours. Second term. Given biennially, alternating with course 12. Prerequisite, courses 1 and 2.

Rapid reading with lectures, the work centering upon such writers as Bazin, Daudet, Loti, and Zola.

\*10. PRACTISE IN SPEAKING AND WRITING FRENCH: Based on Daudet's Stories. Two credit hours. Third term. Students wishing to elect this course must have the consent of the instructor in charge. Given biennially, alternating with course 13.

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\*Not given in 1907-1908.

11. FRENCH TRAVEL WRITERS. Two credit hours. First term. *Tu., Th., at 9.* Given biennially, alternating with course 8. Prerequisite, courses 1 and 2. Associate Professor BRUCE.

Scenes of travel from Gautier, Hugo and Dumas. Gautier's *Voyage en Espagne* (Clarendon Press), and others.

12. EIGHTEENTH CENTURY PROSE. Two credit hours. Second term. *Tu., Th., at 9.* Given biennially, alternating with course 9. Prerequisite, course 1 and 2. Associate Professor BRUCE.

Selections from Voltaire (ed. Cohn and Woodward) or others.

13. ADVANCED CONVERSATIONAL PRACTISE: Based on Stories of Coppee and Maupassant. Two credit hours. Third term. Students wishing to elect this course must have the consent of the instructor in charge. *Tu., Th., at 9.* Given biennially, alternating with course 10. Associate Professor BRUCE.

\*14. FRENCH SEMINARY A. Two credit hours. Three terms. Given biennially, alternating with course 15. Prerequisite, courses 1, 2, 4, 5, 6, and 7, or an equivalent.

Studies in specific literary fields. Subjects for 1908-1909 announced later.

15. FRENCH SEMINARY B. Two credit hours. Three terms. *Tu., Th., at 2.* Given biennially, alternating with course 14. Prerequisite, courses 1, 2, 4, 5, 6, and 7, or an equivalent. Professor BOWEN.

Studies in Old French (with emphasis of *la Chanson de Roland*) and in the language and writers of the Sixteenth Century (Darmesteter et Hatzfeld, *Morceaux choisis*); special consideration of Montaigne.

16. FRENCH COMEDY OF THE EIGHTEENTH CENTURY. Three credit hours. First term. *M., Th., F., at 10.* Given biennially, alternating with course 4. Prerequisite, courses 1 and 2. Professor BOWEN.

Lectures on the growth of French Comedy, with work centering upon Marivaux and Beaumarchais. Olmsted's edition of Marivaux's Comedies, and *le Barbier de Séville*.

17. FRENCH SOCIETY IN THE SEVENTEENTH CENTURY. Three credit hours. Second term. *M., Th., F., at 10.* Given biennially, alternating with course 5. Prerequisite, courses 1 and 2. Professor BOWEN.

Crane's Selections; with lectures. Special reference to the *Précieux* Movement.

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\*Not given in 1907-1908.

18. PRECURSORS OF FRENCH ROMANTICISM. Three credit hours. Third term. *M., Th., F., at 10.* Given biennially, alternating with course 6. Prerequisite, courses 1 and 2. Professor BOWEN.

Rousseau, Chateaubriand (Bowen's *Atala* and *René*) and Madame de Staël. With lectures.

19. GRADUATE COURSES. Special courses are arranged at the beginning of each year to meet the needs of individual graduate students. Professor BOWEN.

## II. ITALIAN.

\*1. ELEMENTARY ITALIAN. Two credit hours. Three terms.

Grammar (Edgren's or Young's) and Bowen's *Italian Reader*. Modern prose. Comedy (Goldoni). Students are advised to postpone the election of this course until they have completed French 1, or its equivalent. Given biennially.

2. ADVANCED ITALIAN. Two credit hours. Three terms. Manzoni (*I Promessi Sposi*). Dante (*Vita Nuova*, *Inferno*). With lectures. *M., W., at 3.* Given biennially. Prerequisite, course 1. Associate Professor BRUCE.

## III. SPANISH.

1. ELEMENTARY SPANISH. Four credit hours. Three terms. Grammer (Hills' and Ford's or Edgren's), and Ingraham's *Victoria y Otros Cuentos*. Easy prose and plays. Composition and conversation. Sec. I, *M., Tu., Th., F., at 9.* Sec. II, *M., Tu., Th., F., at 11.* Sec III and IV, *Tu., W., Th., F., at 2.* Assistant Professor INGRAHAM, Assistant Professor PEIRCE, Mr. ——.

2. MODERN SPANISH LITERATURE. Four credit hours. Three terms. *Tu., W., Th., F., at 3.* Prerequisite, course 1. Assistant Professor INGRAHAM.

The Modern Novel and Drama. Lectures covering a survey of the literature. Composition and conversation continued.

3. CLASSICAL PROSE AND DRAMA. Two credit hours. Three terms. *Tu., Th., at 3.* Prerequisite, Course 1. Professor BOWEN.

Cervantes (selections from *Don Quixote*), Calderon, and others. Lectures.

## SOCIOLOGY

(See Economics and Sociology.)

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\*Not given in 1907-1908.

## SPANISH

(See Romance Languages.)

## ZOOLOGY AND ENTOMOLOGY

(Office, Room 1, Biological Hall.)

PROFESSOR OSBORN, ASSOCIATE PROFESSOR HINE, ASSOCIATE PROFESSOR LANDACRE, MR. BALL, MR. JACKSON, MR. MORSE.

1. INVERTEBRATE AND VERTEBRATE. Three credit hours. Three terms. Lecture, *Tu.*, *Th.*, at 8, or *M.*, *F.*, at 10. Laboratory, *Tu.*, or *Th.*, 1 to 3. Professor OSBORN, Associate Professor LANDACRE.

2. COMPARATIVE ANATOMY OF VERTEBRATES. Three or five credit hours. Three terms. Quiz, *W.*, at 1. Laboratory, *M.*, *Tu.*, *W.*, 1 to 4. Prerequisite, course 1 or equivalent. Associate Professor LANDACRE.

12. GROSS ANATOMY OF THE FROG. Three or five credit hours. First term. Time to be arranged. Prerequisite, course 1. Associate Professor LANDACRE.

13. MINUTE ANATOMY OF THE FROG. Three or five credit hours. Second term. Time to be arranged. Prerequisite, course 1. Associate Professor LANDACRE.

14. EMBRYOLOGY OF THE FROG. Three or five credit hours. Second term. Time to be arranged. Prerequisite, course 1. Associate Professor LANDACRE.

15, 16, 17. INVERTEBRATE MORPHOLOGY. Three or five credit hours. Three terms. Time to be arranged. Prerequisite, course 1. Professor OSBORN.

18. INVERTEBRATE EMBRYOLOGY. Three or five credit hours. Three terms. Laboratory. Time to be arranged. For graduates. Prerequisite, courses 1 and 2. Professor OSBORN.

19. VERTEBRATE EMBRYOLOGY: Karyokinesis, etc. Three or five credit hours. First term. Lecture, *Th.*, at 1. Laboratory, *Th.*, *F.*, 1 to 4. Prerequisite, course 1. Associate Professor LANDACRE.

20. VERTEBRATE EMBRYOLOGY: Chick and Mammal. Three or five credit hours. Second and third terms. Lecture, *Th.*, at 1; *Th.*, *F.*, 1 to 4. Prerequisite, courses 1 and 19. Associate Professor LANDACRE.

21. COMPARATIVE NEUROLOGY. Three to five credit hours. Three terms. Time to be arranged. Prerequisite, course 1 or equivalent, but is open to advanced students in psychology and pedagogy. Associate Professor LANDACRE.

22. CYTOLOGY. Three or five credit hours. Three terms. Time to be arranged. Prerequisite, course 1 and equivalent of 2, or 15, 16, 17. Professor OSBORN.

23. ENTOMOLOGY. Three or five credit hours. Three terms. Time to be arranged. Prerequisite, course 1. Professor OSBORN.

24. ORNITHOLOGY. Two credit hours. Three terms. Lecture, *M.. at 10.* Laboratory, to be arranged. Associate Professor HINE.

25. RESEARCH WORK. Five or ten credit hours. Three terms. Prerequisite, course 1 and the equivalent of 2 or 15, 16, 17, or 19, 20. Professor OSBORN.

26. SEMINARY. One credit hour. Three terms. *Th., at 4.* Professor OSBORN, Associate Professor LANDACRE.

27. TEACHERS' COURSE. Two or three credit hours. Three terms. Professor OSBORN, Associate Professor LANDACRE.

30. INVERTEBRATE ZOOLOGY. Five credit hours. For graduates only. Time to be arranged. Professor OSBORN.

33. VERTEBRATE EMBRYOLOGY. Three or five credit hours. Study of Karyokinesis, Germ layers, organogeny, etc. For graduates only. Associate Professor LANDACRE.

ANNOUNCEMENTS OF OTHER DEPARTMENTS  
OF THE UNIVERSITY

The Faculty of the College of Arts, Philosophy, and Science will accredit towards the degree of Bachelor of Arts a limited amount of work in the courses announced below. The student desiring to elect one or more of these courses is required to file a petition with his election card in June, showing the special purpose which he has in view, and bearing the written approval of the professor in charge of the course desired. The Executive Committee will not count towards the degree in Arts any course named below that is not allied to the work of the student in the College of Arts, Philosophy, and Science. But a student with no conditions outstanding who has at least forty-five term hours to his credit may, without petition, elect any course in the University on which he is prepared to enter, as extra work, not counting towards the degree of Bachelor of Arts.

## ART

## PROFESSOR BRACKEN.

1. THEORY AND PRACTISE OF TEACHING ARTS. Two credit hours. First term. Time to be arranged. Professor BRACKEN.
2. Continuation of 1. Two credit hours. Second term. Time to be arranged. Professor BRACKEN.
3. Continuation of 2. Two credit hours. Third term. Time to be arranged. Professor BRACKEN.
10. DESIGN AND COMPOSITION. Two credit hours. First term. Time to be arranged. Professor BRACKEN.
11. Continuation of 10. Two credit hours. Second term. Time to be arranged. Professor BRACKEN.
12. Continuation of 11. Two credit hours. Third term. Time to be arranged. Professor BRACKEN.
20. CHARCOAL DRAWING FROM STILL LIFE, NATURE, AND CASTS. One to three credit hours. First term. Time to be arranged. Professor BRACKEN.
21. CHARCOAL DRAWING FROM COSTUMED MODEL. One to three credit hours. Second term. Time to be arranged. Professor BRACKEN.

22. CHARCOAL DRAWING. LANDSCAPE AND STILL LIFE. One to three credit hours. Third term. Time to be arranged. Professor BRACKEN.

30. PENCIL DRAWING FROM STILL LIFE AND NATURE. One credit hour. First term. Time to be arranged. Professor BRACKEN.

31. PENCIL DRAWING FROM LIFE AND STILL LIFE. One credit hour. Second term. Time to be arranged. Professor BRACKEN.

33. PENCIL DRAWING OUT OF DOORS. One credit hour. Third term. Time to be arranged. Professor BRACKEN.

35. PAINTING IN OIL OR WATER COLOR. One to three credit hours. First term. Time to be arranged. Professor BRACKEN.

36. Continuation of 35. One to three credit hours. Second term. Time to be arranged. Professor BRACKEN.

37. LANDSCAPE. One to three credit hours. Third term. Time to be arranged. Professor BRACKEN.

40. CHARCOAL, PENCIL, OR PEN SKETCHING FROM LIFE. Professor BRACKEN.

### ENGINEERING DRAWING

(Office, Brown Hall.)

PROFESSOR FRENCH, ASSISTANT PROFESSOR LEWIS, ASSISTANT PROFESSOR MAJOR, MR. TIDBALL, MR. ROGERS, MR. MEIKLEJOHN, MR. NORRIS.

(Of the courses offered in the Department of Engineering Drawing, the following are open to students in the College of Arts, Philosophy, and Science.)

7. PHOTOGRAPHY. Two credit hours. First term. *M., Tu., 1 to 3.* Prerequisite, Chemistry 1.

15. TECHNICAL DRAWING. One and one-half credit hours. Second and third terms. *M., 1 to 4.*

20. MECHANICAL DRAWING. One credit hour. First term. *M., 1 to 4.*

24. FREEHAND DRAWING. One or two credit hours. First term.

25. FREEHAND DRAWING. One or two credit hours. Second term.

26. FREEHAND DRAWING. One or two credit hours. Third term.

24, 25 and 26 constitute a continuous year's work.

45. TECHNICAL DELINEATION. Pencil rendering. Two credit hours. First term. Prerequisite, Drawing 26. *Tu., Th., 10 to 12.*

46. TECHNICAL DELINEATION: Elementary Pen and Ink rendering. Two credit hours. Second term. Prerequisite, Drawing 29. *Tu., Th., 10 to 12.*

47. TECHNICAL DELINEATION: Brush rendering. Two credit hours. Third term. Prerequisite, Drawing 45. *Tu., Th., 10 to 12.*

Courses 45, 46 and 47 are designed for students in Biological work, and provide training in rendering in pencil, pen and ink, and brush.

### CIVIL ENGINEERING

(Office, Room 33, Brown Hall.)

MR. CHAMBERLAIN, MR. WARD.

(Of the twenty-five courses offered in the Department of Civil Engineering, the following course is open to students of the College of Arts, Philosophy, and Science.)

21. SURVEYING. Three credit hours. Third term. *M., W., F., at 9.* Prerequisite, Mathematics 21, 22, 23 or equivalent. Mr. CHAMBERLAIN, Mr. WARD.

### DOMESTIC SCIENCE

(Office, Rooms 1, 3 and 10, Hayes Hall.)

Students may elect courses in either Domestic Art or Domestic Science, but not in both.

DOMESTIC SCIENCE.

PROFESSOR STONER.

1. FOOD ECONOMICS. Five credit hours. First term. *Tu., Th., at 9, and Tu., W., 1 to 4.* Prerequisite, Chemistry 1 or its equivalent, and Botany. Professor STONER.

2. FOOD ECONOMICS. Five credit hours. Second term. Days and hours as in course 1. Prerequisite, course 1. Professor STONER.

3. ADVANCED FOOD ECONOMICS. Five credit hours. Third term. Days and hours as in course 1. Prerequisite, course 2. Professor STONER.

10. HOUSEHOLD ECONOMICS. Two credit hours. Third term. *Tu., Th., at 10.* Professor STONER.

## DOMESTIC ART.

## ASSOCIATE PROFESSOR BABB.

1. HANDCRAFT. Two credit hours. First term. *W., at 11 and Th., or F., 1 to 4.* Prerequisite, Drawing 29 or equivalent. Associate Professor BABB.

2. TEXTILES. Two credit hours. Third term. Days and hours as in course 1. Prerequisite, course 1. Associate Professor BABB.

3. TEXTILES. Two credit hours. Third term. Days and hours as in course 1. Prerequisite, course 2. Associate Professor BABB.

## ELECTRICAL ENGINEERING

(Office, Room 8, Electrical Building.)

PROFESSOR CALDWELL, ASSOCIATE PROFESSOR ANDEREGG, ASSISTANT PROFESSOR COGGESHALL.

6. ELECTRICAL ENGINEERING. Two credit hours. First and second terms. *M., Th., at 10.* Prerequisite, Mathematics and Physics 2. Associate Professor ANDEREGG.

7. ELECTRICAL ENGINEERING; LABORATORY. Two credit hours. First and second terms. Time to be arranged subject to available accommodations. Course 6 must accompany this course. Associate Professor ANDEREGG, Assistant Professor COGGESHALL.

8. DIRECT CURRENT DYNAMO MACHINERY. Four credit hours. Second term. *M., Tu., Th., F., at 9.* Prerequisite, Physics 4 and 6, or its equivalent. Associate Professor ANDEREGG.

9. ELEMENTARY DYNAMO; LABORATORY. Four credit hours. Third term. *W., Th., 1 to 5, or F., 1 to 5; S., 8 to 12.* Election subject to available accommodations. Prerequisite, course 8. Associate Professor ANDEREGG, Assistant Professor COGGESHALL.

15. ALTERNATING CURRENT CIRCUITS AND MACHINERY. Two credit hours. Third term. *M., Th., at 10.* Prerequisite, course 9. Professor CALDWELL.

16. Continuation of 15. Three credit hours. First term. *M., W., F., at 11.* Prerequisite, course 15.

17. Continuation of 16. Two credit hours. Second term. *M., W., at 8.* Prerequisite, course 16.

11. ADVANCED DYNAMO LABORATORY. Three credit hours. Three terms. First and second terms. *Tu., or Th., 10 to 5.* Third term. *M., or Tu., 10 to 5.* Must be accompanied by courses 16 and 17. Professor CALDWELL, Assistant Professor COGGESHALL.

## MECHANICAL ENGINEERING

(Office, Room 11, Hayes Hall.)

PROFESSOR MAGRUDER.

34. THERMODYNAMICS. Five credit hours. Second term. *M., Tu., W., Th., F., at 8.* Open only by permission of instructor. Professor MAGRUDER.

## MECHANICS

(Office, School of Mines Building.)

PROFESSOR J. E. BOYD, ASSISTANT PROFESSOR CODDINGTON, MR. KINDLE.

1, 2, 3. MECHANICS. Five credit hours. Three terms. *M., Tu., W., Th., F., at 8, 9, or 11.*

## METALLURGY AND MINERALOGY

(Office, School of Mines Building.)

PROFESSOR N. W. LORD, ASSOCIATE PROFESSOR SOMERMIEIER,  
MR. DEMOREST.

2. MINERALOGY. Three credit hours. Third term. *M., W., F., at 11.* Prerequisite, Mathematics 21, 22, 23, or equivalent, and Chemistry 1. Professor LORD.

3. DETERMINATIVE MINERALOGY. Five credit hours. Third term. *M., Tu., 1 to 5.* Prerequisite, course 2. Professor LORD.

5. METALLURGICAL LABORATORY. Five credit hours. Three terms. *W., Th., F., 1 to 4.* Prerequisite, Physics 2 and two years of Chemistry. Associate Professor SOMERMEIER.

## THE BRYAN PRIZE

Through the generosity of Hon. William J. Bryan an annual prize of fifteen dollars is offered for the best essay on the principles underlying the form of government of the United States. Competition for this prize is open to all students of the University. For further information, make inquiry of the head of the department of American History and Political Science.

## HIGH SCHOOL COMMITTEE

In order to serve the schools of the state the Faculty has provided a committee, one of the duties of which is to assist graduates of the University to teaching positions for which they are best fitted. Any student of the University intending to teach is invited to enroll his name with the committee on a blank provided for that purpose. Blanks may be obtained from the Executive Office. Graduates of the University who are already engaged in teaching are also cordially invited to correspond with the appointment committee with a view to bettering their positions. Correspondence is invited from Boards of Education and from Superintendents and Principals of schools in need of teachers. No fee is charged for the services of the committee. The secretary of the committee is Professor David R. Major, to whom all correspondence should be addressed.

## FEES AND EXPENSES

## GENERAL CHARGES

All term dues must be paid at the opening of each term as a condition of admission to classes.

**INCIDENTAL FEE.**—A charge of six dollars a term, eighteen dollars a year, is made against all students, under the head of incidental expense. In the case of former students if this fee is not paid until the second day of the term one dollar will be added, and for each succeeding day of delinquency fifty cents will be added.

TUITION.—Tuition is free in the College of Arts, Philosophy, and Science. But students who elect five hours or less in the College of Law pay a fee of \$7.50 per semester; more than five hours, \$22.50.

#### LABORATORY FEES

A fee of one dollar per term is charged in all laboratory courses. In addition to this fee, all students are required to pay for materials consumed. All first year students in elementary chemistry (Chemistry 3, 7, 12) will be required to buy a \$10.00 card. This will cover the expense for the year with reasonable care in the use of supplies.

The laboratory courses, for each of which the fee is one dollar per term, are as follows: Anatomy and Physiology, 3, 4, 5, 9, 11; Astronomy, 2, 4, 5, 6; Bacteriology, 5, 6; Botany, all courses; Chemistry, all courses except 11, 21, 30, 35, 40, 25, 26, 28, 36; Civil Engineering, 21; Domestic Science, 1, 2, 3; Domestic Art, 1, 2, 3; Drawing, 7, 10, 14, 17, 18, 19, 24, 25, 26; Electrical Engineering, 7, 9, 11; Geology, 13, 14, 15, 16, 19, 20, 11, 12; Metallurgy, 3, 5; Physics, 11, 12, 13, 15; Zoology and Entomology, all courses except 26, 27.

#### LOCKER FEE

A fee of one dollar a term is required from those who make use of a locker in the gymnasium.

#### CADET UNIFORMS

The uniform with which the members of the battalion are required to provide themselves costs (without overcoat) about fourteen dollars. It is quiet in pattern, and is designed to be worn in place of civilian dress.

#### GRADUATION FEE

A fee of five dollars, to cover expense of graduation and diploma, is required of each person receiving one of

the ordinary degrees from the University, and this fee must be paid before the degree is conferred. A like fee of ten dollars is charged to each person receiving one of the higher graduate degrees.

#### AUDITOR'S FEE

On presentation to the Bursar of the written consent of the head of a department, and on the payment to the Bursar of an auditor's fee of one dollar, any person engaged in teaching is permitted to attend, in that department, any class or course (not to exceed three hours a week for one-half year) which is announced to be especially for teachers or those intending to teach.

#### ROOMS AND BOARD

The South Dormitory affords unfurnished rooms for students who desire to board themselves and thus reduce their expenses to a minimum. The expense of living in this way is about two dollars per week. Applications for rooms should be made to the President of the University.

Boarding clubs are also formed in the neighborhood of the University. Furnished rooms are rented at seventy-five cents to one dollar a week for each student, and the cost of table board is two dollars to three dollars a week.

Board with furnished rooms can be obtained in private families, within convenient distance of the University, at rates varying from three and a half to five dollars per week. The ruling rate may be taken as four dollars.

#### FELLOWSHIPS

To encourage graduates of this University, and of other similar and approved institutions in this State, to continue their studies and to undertake advanced work leading to the higher degrees, the University has established fellowships in several departments. These demand about

one-half of the time of the fellow for laboratory or other similar assistance—as far as possible along the line of his graduate study. The remainder of his time is given to graduate work. The fellowships pay from \$150 to \$300 for the University year. The following are the present holders of fellowships:

L. A. Hawkins, B. Sc. (Morningside Col.)	Botany
Wm. V. Linder, A. B. (Wabash Col.)	Chemistry
C. F. Long, A. B. (Miami Univ.)	"
Benjamin T. Brooks, B. A.	"
Warren A. Ruth, B. A. (Wabash Col.)	"
A. W. Schorger, A. B. (Wooster Univ.)	"
William F. Gephart, B. A.	Economics and Sociology
Edith H. Richardson, B.A. (Mt. Holyoke College)	English
Charles E. Blanchard	"
Lewis C. Cox, B.A.	Mathematics
Grace M. Bareis, B.A. (Heidelberg Univ.)	"
J. F. Kindle, B.A.	Mechanics
C. E. Jackson, A.B. (DePauw Univ.)	Zoology and Entomology
W. C. Morse, B. A.	" " "
Elmer D. Ball, B. Sc., M. Sc.	" " "

### CHRISTIAN ASSOCIATIONS

The Young Men's Christian Association has come to occupy a prominent place in university life. It has a membership of four hundred and forty-eight men, and is affiliated with the World's Student Christian Federation.

The Association House furnishes free for the use of its members a reading room, library, magazines and papers, piano, and telephone—a college home.

Religious meetings are held for men on Sunday afternoon; there are also frequent meetings for the promotion of social intercourse and good fellowship. Courses in systematic Bible study and in modern missions are offered. A most helpful feature of the work is that in the interest of new students at the opening of the school year. Desirable rooms and boarding places are found and posted for reference at the Association House. Representatives of the

Association meet the trains, assist students in finding satisfactory locations, and endeavor in every way to make them feel at home. The Employment Bureau helps to find work.

A copy of the Students' Handbook, giving information about Columbus, the University, and the various college organizations and activities, will be sent free to prospective students.

For this handbook or for further information, address the General Secretary of O. S. U. Y. M. C. A., 239 West Tenth avenue, Columbus, Ohio.

The Young Women's Christian Association holds religious meetings regularly at noon on Tuesdays. This organization is active and efficient in working for the higher interests of the young women. Young women planning to enter the University are invited to correspond with reference to board or rooms with the General Secretary, O. S. U. Y. W. C. A., University Hall, Columbus, Ohio.

### SELF SUPPORT

There is a large amount of work upon the University farm which is assigned to students, preference being given to those who are studying Agriculture. *But the University cannot promise work to all applicants.* Many students find work in private families, in offices, and in various occupations, by means of which they defray a portion of their expenses. A person of ability and energy, who is master of a trade, or who can do good work of any kind, can generally find employment, but prospective students are cautioned against depending wholly upon such uncertain sources of income.

Students should distinctly understand that where they attempt entire or partial self-support they should lengthen the term of study. An employment bureau is maintained at the University where the names of those seeking work and of those desiring workers are recorded. Students should report to the Executive Office from time to time as to their needs and their work. This will enable the authorities to be more helpful than otherwise would be possible.







The Ohio State University Bulletin is published fifteen times during the academic year, as follows: Monthly in October, November, and June, and bi-weekly in December, January, February, March, April, and May.

# Ohio State University Bulletin

## College of Arts Philosophy and Science

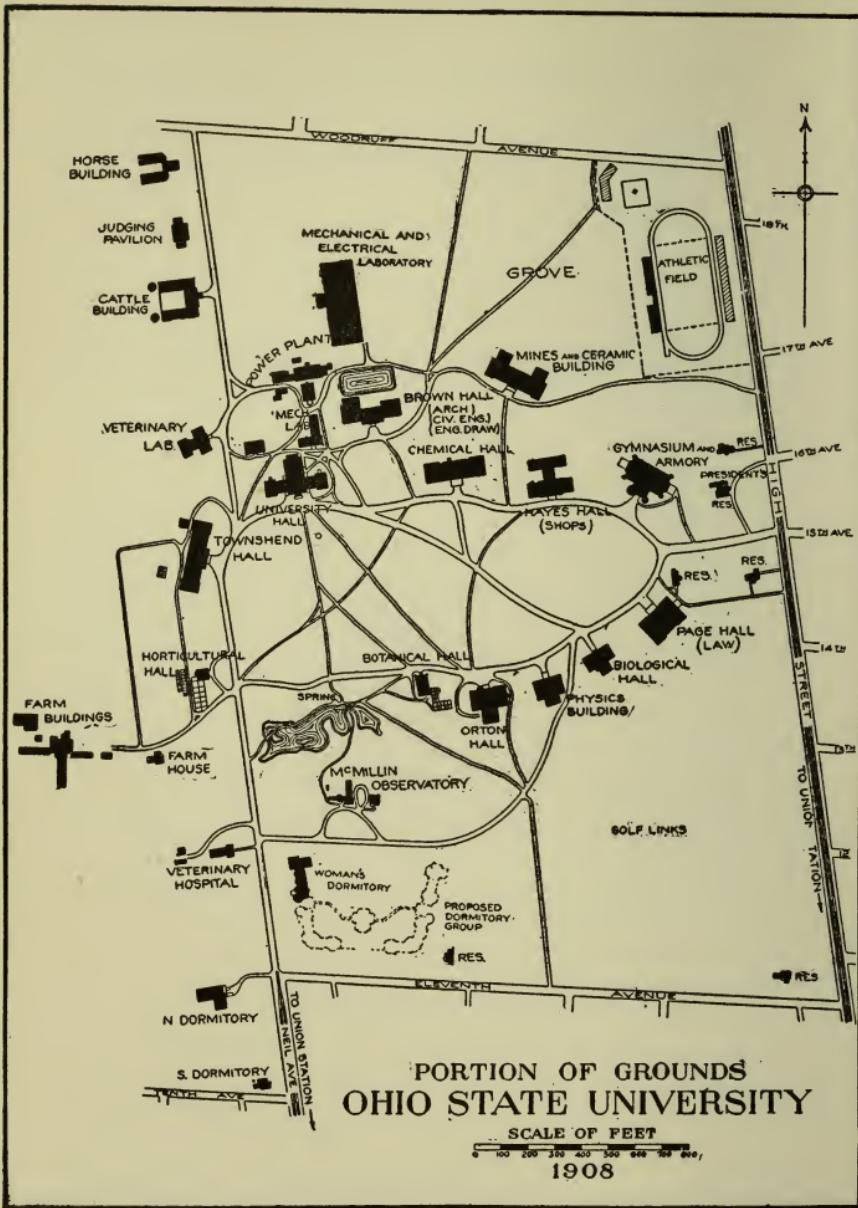


February 27, 1908.

6.4.7

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PUBLISHED BY THE UNIVERSITY AT COLUMBUS  
Entered as second-class matter November 17, 1907, at the postoffice  
at Columbus, Ohio, under Act of Congress, July 16, 1894.



PORTION OF GROUNDS  
OHIO STATE UNIVERSITY

SCALE OF FEET  
0 100 200 300 400 500 600 700 800

1908

## OHIO STATE UNIVERSITY

The Ohio State University, located in Columbus two miles north of the Union Station, is a part of the public educational facilities maintained by the State. It comprises seven colleges:

The College of Agriculture and Domestic Science,  
The College of Arts, Philosophy, and Science,  
The College of Education,  
The College of Engineering,  
The College of Law,  
The College of Pharmacy,  
The College of Veterinary Medicine.

This bulletin is devoted exclusively to the work of the College of Arts, Philosophy, and Science.

(NOTE.—In requesting any of the announcement bulletins of the University, address the University Editor, Ohio State University, Columbus, Ohio.)

## UNIVERSITY CALENDAR

1908

Entrance examinations, (8 a. m.) Tuesday to Saturday,  
June 16 to 20.

Summer term, June 22 to August 14.

Entrance examinations, (8 a. m.) Tuesday to Saturday,  
September 15 to 19.

First term begins—Registration Day—Tuesday, September 22.

President's Annual Address, (11 a. m.) Friday, September 25.

Latest date of admission to candidacy for a degree at the  
Commencement of June, 1909, Thursday, October 1.

Thanksgiving recess, November 27 and 28.

Latest date for filing thesis subject, Tuesday, December 15.

First term ends, Wednesday, December 23.

### CHRISTMAS VACATION

1909

Second term begins—Registration Day—Tuesday, January 5.

Washington's Birthday, Monday, February 22.

Second term ends, Friday, April 2.

### SPRING RECESS

Third term begins—Registration Day—Wednesday, April 7.

Field Day—Athletic Association—Saturday, May 8.

Competitive Drill—Cadet Regiment—Saturday, May 22.

Final examinations, Friday to Thursday, June 11 to 17.

Latest date for presenting thesis, Saturday, June 12.

Entrance examinations, (8 a. m.) Tuesday to Saturday,  
June 15 to 19.

Latest date for filing bound copy of thesis, Friday, June 18.

Commencement, Wednesday, June 23.

## COLLEGE OF ARTS PHILOSOPHY AND SCIENCE

This College comprises those courses of study that are designed to furnish a liberal education in the languages and literatures, the sciences, mathematics, philosophy, history, politics, administration, economics, sociology, commerce, and educational theory, as distinguished from the technical and professional courses which constitute the work of the other colleges.

### DEPARTMENTS

The College of Arts, Philosophy, and Science includes work in the following departments: American History and Political Science, Anatomy and Physiology, Astronomy, Bacteriology, Botany, Chemistry, Economics and Sociology, English, European History, Geology, Germanic Languages and Literatures, Greek Language and Literature, Latin Language and Literature, Mathematics, Military Science and Tactics, Philosophy, Physical Education, Physics, Psychology, Romance Languages and Literatures, Zoology and Entomology. The following department also offer a limited amount of work as elective studies in the College of Arts, Philosophy, and Science: Architecture, Art, Civil Engineering, Domestic Science, Engineering Drawing, Electrical Engineering, Mechanical Engineering, Mechanics, Metallurgy and Mineralogy.

### GRADUATE SCHOOL

The graduate instruction given in the College of Arts, Philosophy, and Science is organized in a Graduate School. A special bulletin describing the organization, admission requirements, and work of the Graduate School may be obtained on application to the University Editor.

## THE LAKE LABORATORY

The University maintains a Lake Laboratory at Sandusky during the summer vacation, which is designed to provide opportunity for the investigation of the biology of the lake region, and for giving certain courses of instruction in the departments of Botany, Zoology, and Entomology. A new and commodious laboratory building, capable of accommodating at least one hundred students and investigators, is well provided with tables, dark rooms, aquaria, water, and gas. Microscopes and other apparatus are supplied from the University. Boats, collecting apparatus, dredges, seines, etc., are well supplied, and special attention is given to methods of collecting and to field work. For further information write for a special bulletin which may be obtained from the University Editor.

COURSES IN BUSINESS ADMINISTRATION AND  
SOCIAL SERVICE

Students desiring to prepare themselves to pursue a business career or to engage in philanthropic work are invited to send for a special bulletin entitled Courses in Business Administration and Social Service.

## FACULTY AND INSTRUCTORS

WILLIAM OXLEY THOMPSON, D. D., LL. D., PRESIDENT of  
the University.

\*JOSEPH VILLIERS DENNEY, B. A., DEAN and Professor of  
English.

WILBUR HENRY SIEBERT, A. M., Acting Dean and Pro-  
fessor of European History.

CHARLES A. BRUCE, B. A., Secretary, and Associate Pro-  
fessor of Romance Languages.

WILLIAM HENRY SCOTT, LL. D., Professor of Philosophy.

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\*Absent on leave, 1907-1908.

SAMUAL CARROLL DERBY, A. M., Professor of the Latin Language and Literature.

JOSIAH RENICK SMITH, A. M., Professor of the Greek Language and Literature.

BENJAMIN FRANKLIN THOMAS, Ph. D., Professor of Physics.

GEORGE WELLS KNIGHT, Ph. D., Professor of American History and Political Science.

ROSSER DANIEL BOHANNAN, B. Sc., C. E., E. M., Professor of Mathematics.

ALBERT MARTIN BLEILE, M. D., Professor of Anatomy and Physiology.

WILLIAM ASHBROOK KELLERMAN, Ph. D., Professor of Botany.

BENJAMIN LESTER BOWEN, Ph. D., Professor of Romance Languages and Literatures.

†ALLEN CAMPBELL BARROWS, A. M., D. D. Professor of English.

WILLIAM MCPHERSON, Ph. D., Professor of Chemistry.

HERBERT OSBORN, M. Sc., Professor of Zoology and Entomology, and Director of the Lake Laboratory.

HENRY CURWEN LORD, B. Sc., F. R. A. S., Professor of Astronomy and Director of the Emerson McMillin Observatory.

\*CHARLES SMITH PROSSER, D. Sc., Professor of Geology.

JOHN ADAMS BOWNOCKER, D. Sc., Professor of Inorganic Geology, and Curator of the Museum.

LEWIS ADDISON RHOADES, Ph. D., Professor of Germanic Languages and Literatures.

DAVID R. MAJOR, Ph. D., Professor of Psychology.

CHARLES BRADFIELD MORREY, B. A., M. D., Professor of Bacteriology.

JAMES EDWIN HAGERTY, Ph. D., Professor of Economics and Sociology.

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†Died January 19, 1908.

\*Absent on leave 1907-1908.

EMILY E. BRACKEN, Professor of Art.

HENRY RUSSELL SPENCER, Ph. D., Professor of American History and Political Science.

GEORGE WASHINGTON McCOARD, M. A., Associate Professor of Mathematics.

ARTHUR WINFRED HODGMAN, Ph. D., Associate Professor of the Classical Languages.

WILLIAM EDWARDS HENDERSON, Ph. D., Associate Professor of Chemistry.

JOSEPH RUSSELL TAYLOR, M. A., Associate Professor of English.

CHARLES WILLIAM FOULK, B. A., Associate Professor of Chemistry.

\*JOHN H. SCHAFFNER, M. Sc., Associate Professor of Botany.

JAMES STEWART HINE, B. Sc., Associate Professor of Zoology and Entomology.

FRANCIS LEROY LANDACRE, B. A., Associate Professor of Zoology and Entomology.

WALLACE STEDMAN ELDEN, Ph. D., Associate Professor of the Classical Languages.

MATTHEW BROWN HAMMOND, Ph. D., Associate Professor of Economics and Sociology.

GEORGE B. VILES, Ph. D., Associate Professor of Germanic Languages and Literatures.

FREDERICK EDWARD KESTER, Ph. D., Associate Professor of Physics.

HARRY WALDO KUHN, Ph. D., Associate Professor of Mathematics.

WILLIAM LUCIUS GRAVES, M. A., Assistant Professor of English.

GEORGE H. MCKNIGHT, Ph. D., Assistant Professor of English.

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\*Absent on leave, 1907-1908.

THOMAS HARVEY HAINES, Ph. D., Assistant Professor of Psychology.

EDWIN F. CODDINGTON, Ph. D., Assistant Professor of Mechanics.

EDGAR S. INGRAHAM, Ph. D., Assistant Professor of Romance Languages.

EDGAR HOLMES MCNEAL, Ph. D., Assistant Professor of European History.

FAYETTE AVERY MCKENZIE, Ph. D., Assistant Professor of Economics and Sociology.

ARTHUR ERNEST DAVIES, Ph. D., Assistant Professor of Philosophy.

JOHN C. DUNCAN, M. S., Assistant Professor of Economics and Sociology.

WALTER THOMPSON PIERCE, Ph. D., Assistant Professor of Romance Languages.

JOHN B. PRESTON, M. A., Assistant Professor of Mathematics.

ROBERT F. GRIGGS, M. A., Assistant Professor of Botany.

JAMES REMWICK WITHROW, Ph. D., Assistant Professor of Chemistry.

FREDERIC C. BLAKE, Ph. D., Assistant Professor of Physics.

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NATHANIEL W. LORD, E. M., Professor of Metallurgy and Mineralogy.

OLIVE JONES, B. A., Librarian.

WILLIAM T. MAGRUDER, M. E., Professor of Mechanical Engineering.

GEORGE L. CONVERSE, Captain (Retired) U. S. A., Professor of Military Science and Tactics.

FRANCIS C. CALDWELL, A. B., M. E., Professor of Electrical Engineering.

JAMES ELLSWORTH BOYD, M. S., Professor of Mechanics.

THOMAS EWING FRENCH, M. E., Professor of Engineering Drawing.

H. SHINDLE WINGERT, M. D., Director of Physical Education for Men.

RUTH AIMEE WARDALL, A. M., Professor of Domestic Science.

GUSTAV A. ANDEREGG, A. M., Associate Professor of Electrical Engineering.

VIRGINIA BABB, B. Dom. Sc., Associate Professor of Domestic Art.

EDWARD ELSWORTH SOMERMEIER, G. Ph., Associate Professor of Metallurgy and Mineralogy.

KARL DALE SWARTZEL, M. Sc., Associate Professor of Mathematics.

CHARLES LINCOLN ARNOLD, M. Sc., Assistant Professor of Mathematics.

ROBERT F. EARHART, Ph. D., Assistant Professor of Physics.

WILLIAM LLOYD EVANS, Ph. D., Assistant Professor of Chemistry.

GEORGE D. HUBBARD, Ph. D., Assistant Professor of Geology.

BERTHOLD A. EISENLOHR, M. A., Assistant Professor of the Germanic Languages and Literatures.

SAMUEL EUGENE RASOR, M. A., M. S., Assistant Professor of Mathematics.

CARSON SAMUEL DUNCAN, M. A., Assistant Professor of English.

J. WARREN SMITH, M. S., Lecturer in Meteorology.

BERTHA M. HOPKINS, M. A., Director of Physical Education for Women.

MAY THOMAS, Ph. D., Instructor in Germanic Languages.

ALFRED EWINGTON, A. M., Instructor in Romance Languages.

FRANK KELTON BAILEY, Ph. D., Instructor of Physics.

ADOLE BUSSE, Ph. D., Instructor in German.

FREDERICA DETMERS, M. Sc., Instructor in Botany.

EUGENE F. McCAMPBELL, B. Sc., Instructor in Bacteriology.

CHARLES SHEARD, M. A., Ph. B., Instructor in Physics.

FRANK C. MCKINNEY, M. A., Instructor in English.

RAYMOND JESSE SEYMOUR, B. Sc., M. D., Instructor in Anatomy and Physiology.

CLARENCE C. VOGT, M. A., Instructor in Chemistry.

WILLIAM FRANKLIN GEPHART, M. A., Instructor in Economics and Sociology.

EUGENE F. McCAMPBELL, B. Sc., Instructor in Bacteriology.

CHARLES E. BLANCHARD, LL. B., Instructor in Oratory and Debate.

JOHN B. PARKER, M. A., Instructor in English.

EDMUND S. MANSON, JR., S. M., Instructor in Astronomy.

CLARENCE ADDISON DYKSTRA, B. A., Instructor in American History and Political Science.

ALFRED DACHNOWSKI, Ph. D., Substitute Assistant in Botany.

JAMES A. BEER, M. A., Assistant in Anatomy and Physiology.

JOHN R. CHAMBERLIN, Assistant in Civil Engineering.

SAMUEL MORRIS, B. A., Assistant in Chemistry.

C. F. JACKSON, M. A., Assistant in Zoology and Entomology.

O. E. WARFIELD, Assistant in Physical Education for Men.

J. THOMAS KIBLER, Assistant in Physical Education for Men.

HOWARD J. LUCAS, B. A., Assistant in Chemistry.

A. W. SCHORGER, A. B., Assistant in Chemistry.

## ADMISSION

Applicants for admission must be at least sixteen years of age. The College is open on equal terms to both sexes.

### UNIVERSITY ENTRANCE BOARD

The admission of students is in charge of the University Entrance Board, which determines the credits which shall be issued on all entrance examinations and certificates, and furnishes all desired information to applicants. Correspondence relating to admission should be addressed to the Entrance Board, Ohio State University, Columbus.

### ADMISSION TO COURSES LEADING TO A DEGREE

There are two modes of admission—by examination and by certificate.

#### ADMISSION BY EXAMINATION

The Entrance Board will conduct entrance examinations June 16 to 20, and September 15 to 19, 1908. A part of the examinations may be taken in June and the remainder in September. All applicants for admission who are not graduates of an accredited or recognized secondary school or approved preparatory school, or who do not possess certificates from the State Board of School Examiners, must take examinations for admission.

**SCHEDULE.**—Examinations will be from 8 to 12 a. m. and from 1 to 5 p. m.

#### TUESDAY

A. M.—Greek and Roman History, English History, General History.

P. M.—Composition and Rhetoric, Classics, Chemistry, Geology.

#### WEDNESDAY

A. M.—Algebra, German.

P. M.—Plane Geometry, Physical Geography.

## THURSDAY

A. M.—Civics, Solid Geometry, Zoology.

P. M.—Cæsar, Astronomy.

## FRIDAY

A. M.—Physics, Physiology, Botany.

P. M.—U. S. History, French, English Literature.

## SATURDAY

A. M.—Virgil, Cicero.

## ADMISSION BY CERTIFICATE

Applicants may be admitted without examination on presentation of properly indorsed certificates from such secondary schools as have been accredited\* or recognized by the University, or from approved normal schools, or from the State Board of School Examiners under the following provisions:

(a) If from secondary schools, the certificate must show that the applicant is a graduate in good standing of the school issuing it; and also must state in detail the studies pursued, the text-books used, the amount of work done in each study, the amount of time devoted to it, and the fact that the applicant has passed in the work.

(b) Any entrance requirement not covered by a certificate must be met by examination.

Blank certificates may be obtained by addressing the Secretary of the Entrance Board. Certificates should be filled out and returned to the University as early as possible after the close of schools in June. Since errors are frequently made in transcribing the school record on the blank form, the applicant should verify his certificate before presenting it to the Entrance Board and see that it gives him credit for all his school work.

## REQUIREMENTS BY UNITS

Applicants to be admitted to full standing must obtain credit by examination or certificate for fifteen units, chosen

\*Regarding accredited and recognized schools, see page 87 and following.

from the five groups which follow, subject to the restrictions stated therein. (A unit is a course of study covering a school year of not less than thirty-five weeks with five periods of at least forty-five minutes each per week.) No one under twenty-one years of age\* will be admitted on less than thirteen units.

#### (A) ENGLISH GROUP

Two units are required in this group. An applicant presenting one unit in this group will be admitted *conditionally*, if his arrearage in all of the groups does not exceed two units. All arrearages must be made good within two years after admission. Preparation in excess of two units in this group may be offered in lieu of the extra units of group (E).

English Composition and Rhetoric.....	1 unit
English Classics .....	1 unit
English Literature .....	1 unit

#### (B) HISTORY GROUP

Two units are required in this group. An applicant presenting one unit in this group will be admitted *conditionally*, if his arrearage in all of the groups does not exceed two units. All arrearages must be made good within two years after admission. Preparation in excess of two units in this group may be offered in lieu of the extra units of group (E).

Civil Government .....	$\frac{1}{2}$ unit
United States History.....	$\frac{1}{2}$ or 1 unit
General History.....	$\frac{1}{2}$ or 1 unit
Greek and Roman History.....	$\frac{1}{2}$ or 1 unit
English History .....	$\frac{1}{2}$ or 1 unit

#### (C) MATHEMATICS GROUP

Three units are required in this group. An applicant presenting two and one-half units in this group will be admitted *conditionally*,

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\*A person twenty-one years of age, or over, who desires to pursue a special line of work and does not desire to become a candidate for a degree, may be admitted by vote of the Executive Committee to such classes as he is qualified to enter; provided, that if he afterwards becomes a candidate for a degree he must pass the requirements for admission at least one year before the degree is conferred. See "Admission to Special Studies."

if his arrearage in all of the groups does not exceed two units. All arrearages must be made good within two years after admission.

Algebra (through quadratics) .....	1 unit
Algebra (beyond quadratics) .....	$\frac{1}{2}$ unit
Geometry (plane) .....	1 unit
Geometry (solid and spherical) .....	$\frac{1}{2}$ unit

#### (D) SCIENCE GROUP

Two units are required in this group, including physics. An applicant presenting one unit in this group will be admitted conditionally, if his arrearage in all of the groups does not exceed two units. All arrearages must be made good within two years after admission. Preparation in excess of two units in this group may be offered in lieu of the extra units of group (E).

Physics .....	1 unit
Physical Geography .....	$\frac{1}{2}$ or 1 unit
Botany .....	$\frac{1}{2}$ or 1 unit
Chemistry .....	1 unit
Physiology .....	$\frac{1}{2}$ unit
Zoology .....	$\frac{1}{2}$ or 1 unit
Geology .....	$\frac{1}{2}$ unit
Astronomy .....	$\frac{1}{2}$ unit

#### (E) FOREIGN LANGUAGE GROUP

Six units are required in this group; or two extra units from the preceding groups, and four units from this. A deficiency of two units is allowed in this group if the total arrearage in all of the groups does not exceed two units. All arrearages must be made good within two years after admission.

Latin .....	2, 3, or 4 units
Greek .....	2, 3, or 4 units
German .....	2, 3, or 4 units
French .....	2, 3, or 4 units
Spanish .....	2, 3, or 4 units

A single unit in a foreign language will not be counted toward entrance.

The extent and character of the work required in each subject mentioned above is indicated on page 81 and following.

#### ADMISSION WITH ADVANCED STANDING

Applicants who have completed at least one year's work in an approved college, and who bring official and explicit certificates describing their courses of study and scholarship,

and letters of honorable dismissal, will be admitted in accordance with either of two plans:

(1) The entrance units on which the candidate was admitted to the approved college will be accepted at their face value; deficiencies will be made up from the college credits presented, and advanced credit will be given for any remaining satisfactory work; or

(2) One year's work will be accepted in lieu of entrance units and the candidate will be admitted without examination and without conditions, but without any advanced standing on the year's work.

Applicants who have completed less than one year's work in an approved college must satisfy the entrance requirements in the usual way, and will then be given credit for any satisfactory work for which they can offer certificates.

### ADMISSION TO SPECIAL STUDIES

Students who desire to pursue special lines of work and do not desire to become candidates for a degree, will be admitted on the following conditions.

1. The regular entrance requirements must be satisfied.
2. But applicants who are not less than twenty-one years of age after obtaining credit for the common English branches and for such other subjects as may be necessary to qualify them for the classes that they wish to enter, may, on the presentation of satisfactory reasons, be admitted to any class in the college; provided; that if any student who has been admitted on these conditions afterwards becomes a candidate for a degree, he shall pass the omitted entrance examinations at least twelve months before the degree is conferred.

3. Before entering the College, students desiring to pursue special work are required to lay before the Executive Committee, for approval or modification, a written statement of the end they have in view, the studies proposed for

the attainment of that end, and the probable period of attendance. Such students will be held as strictly to their accepted schemes of work as are the regular undergraduates to the course of study.

4. Permission to enter as special undergraduates will be refused to all who fail to give satisfactory evidence of definiteness of purpose, and will be withdrawn whenever the conditions on which it was granted cease to exist.

### ADMISSION TO GRADUATE WORK

A special bulletin devoted exclusively to the Graduate School may be obtained on application to the University Editor.

### REMOVAL OF ENTRANCE CONDITIONS

The removal of entrance conditions is administered by the Entrance Board. Conditions may be removed (1) by examination (for schedule of examinations, see page 12); or (2) by the substitution of excess work in other approved subjects; or (3) by the substitution of other equivalent work to be done at the University at such times and in such subjects as the Entrance Board shall direct. All entrance conditions must be removed before the beginning of the third year of residence at the University.

### REQUIREMENTS FOR GRADUATION

#### UNDERGRADUATE COURSES OF STUDY

The work of the College of Arts, Philosophy, and Science is organized on the group-elective system. Several of the groups correspond in their chief studies and learning aims to the "courses"\*\* formerly offered, but with much greater flexibility and much freer opportunities for election. Many other "courses" having equally specific aims are also provided in the groups. The groups, so far as at present

\*\*Arts or Classical, Latin Philosophy, Modern Language Philosophy, English Philosophy, General Science, Commerce and Administration, Education, Preparatory to Law, Preparatory to Medicine, Preparatory to Journalism.

arranged, number twelve. This number will be increased as reasonable demand may arise for new groups. The characteristic features of each group may be judged from its name which is made up of the names of the chief studies of the group. The groups at present recommended are given on pages 21 to 23.

About one-third of every student's curriculum is prescribed. Each student is required to lay sufficiently broad foundations, during the first two years, in English, in two other languages to be chosen by himself, in mathematics and one science, or in two sciences to be chosen by himself, and in history, economics, English, or philosophy. The remaining two-thirds of each student's work is elective; but in order to insure substantial results in the studies thus freely chosen, the student is required to continue two of his first-year studies (any two) through the second year, one of his second-year studies (any one) through the third year, and one of his third-year studies (any one) through the fourth year. In order to guard against the danger of too narrow or too wide a range of work, a maximum and a minimum number of departments is fixed in which the student is allowed to work during any one year. In the first and second years the number of departments thus fixed is four or five; in the third and fourth years the number is three or four.

#### SUMMARY AND REQUIREMENTS

On satisfactory completion of 180 term hours under the restrictions prescribed below, the student will be recommended for the Degree of Bachelor of Arts.

The 180 term hours must include the following, amounting to 57 term hours:

- (a) English 1. (2-2-2) 6 term hours.
- (b) Two of the following languages: (8-8-8) 24 term hours.

Greek 1 or 7, 8, 9; Latin 1, 2, 3;

French 1 or 2; German 1 or 4; Spanish 1 or 2.

(c) Mathematics 31, 32, 33, and 24. (6-6-6) 18 term hours or  
Two of the following: at least (6-6-6) 18 term hours.  
Mathematics 21, 22, 23; Physics 11 or 2;  
Chemistry 7 or 44; Botany 21, 22, 23; Zoology 31.  
Geology 17; Physiology 1.

(d) One of the following: (3-3-3) 9 term hours.  
European History 1 or 14; American History 1;  
Political Science 1; Economics 30, 31, and 32;  
Psychology 1, and Philosophy 101 or 103; English  
7 or 8.

For the remaining 123 term hours required for graduation the student may elect from any courses announced in this college (see page 26 and following) for which he is qualified.

#### FIRST YEAR

(a) Fifteen or sixteen hours each term, chosen from the prescribed work indicated above, including English 1.  
(b) Cadet service (men). Hygiene and Physical Training (women); required throughout the first year.

#### SECOND YEAR

(a) Fifteen hours each term. This must include all the prescribed work not done in the first year; the other work of the second year to be in three or four departments of which at least two shall be departments in which the student has worked during the first year.

(b) Cadet Service (men); Hygiene and Physical Training (women); required throughout the second year.

#### THIRD YEAR

Fifteen hours each term in three or four departments, at least one to be a department in which the student has worked during the second year,

## FOURTH YEAR

Fifteen hours each term in three or four departments, at least one to be a department in which the student has worked during the third year.

## EXTRA HOURS

A student who has postponed a study in group (b) from the first to the second year, may take sixteen hours in the second year, and by the permission of the Executive Committee a student who has shown exceptional proficiency may be allowed to undertake from one to three extra hours. No extra hours will be granted to a first-year student, or to any student with conditions outstanding.

## RULE GOVERNING ELECTIONS

Each student enrolled in the College of Arts, Philosophy, and Science must file at the Registrar's office not later than June 1st of each year a complete statement of the courses he wishes to enter the following year. Blanks for this purpose may be obtained of the Registrar.

## STUDENT ADVISERS

The Faculty of Arts, Philosophy, and Science has provided a system of advisers, the chief objects of which are: (1) to assist the undergraduate in choosing studies that will result in a well-rounded course and will achieve most economically the purpose which the student has in view in his course; (2) to promote closer personal relations between students and instructors and thus to aid the student, so far as possible, in all matters connected with his university life. During his first term of residence each student is assigned by the Executive Committee to a member of the teaching force to whom he is cordially invited to resort for counsel as often as the need arises. Each student is required to secure the signature of his adviser to his election-card in June of each year, and to petitions, at any

time during the year, for a change in work or for increase or diminution of work.

### FIRST YEAR OPTIONS

In order to meet the requirements for graduation, the first-year student must arrange his work on one of the following plans:

I. English; two languages; two sciences, or mathematics and one science, or mathematics alone; deferring until the second year the selection from group (d), above.

II. English; two languages; mathematics or science; one subject from group (d); deferring until the second year a second subject from group (c), above.

III. English; one language; two sciences, or mathematics and one science or mathematics alone; one subject from group (d); deferring until the second year the second language from group (b), above.

In order to assist the student in his choice of work for the first two years, more specific directions are given below in connection with various natural groupings of studies. *These groups are not mandatory.* The student may make other combinations than those suggested, provided his selection of studies fulfills one of the three options given above. In the second year many other combinations are possible. The time schedule, however, is arranged primarily to fit the combinations recommended. The days and hours at which each study is taught may be found by looking up that study on page 26 (et. seq.) of this Bulletin. The title of a group indicates the chief studies of that group.

### STUDY GROUPS

1. CLASSICAL. First year: Greek 1 or 7, 8, 9; Latin 1, 2, 3; English 1; either 6 hours in (c) or 3 hours in (c) and 3 hours in (d). Second year: Greek 7, 8, 9 or 10, 11, 12; Latin 4, 5, 6; begin or continue a modern language, a science and a study in Economics, History, Political Science or Sociology. Before choosing work in (c) or (d), read groups 4 to 12.

2. LATIN, MODERN LANGUAGE. First year: Latin 1, 2, 3; French 1 or 2, or German 1 or 4; English 1; either 6 hours in (c) or 3 hours in (c) and 3 hours in (d). Second year: Latin 4, 5, 6; French or German; English; begin or continue a science and a study in Economics, History, Political Science or Sociology. Before choosing work in (c) or (d), read groups 4 to 12.

3. MODERN LANGUAGES. First year: Begin or continue French and German. (*Not more than one new language should be begun in the first year.*) English 1; either 6 hours in (c) or 3 hours in (c) and 3 hours in (d). Second year: Continue French and German; begin or continue a science and a study in Economics, History, Political Science or Sociology; add English 7 or 8. Before choosing work in (c) or (d), read groups 4 to 12.

4. GENERAL SCIENCE. First year: French 1 or 2 or German 1 or 4; Chemistry 7 or 44; Mathematics 21, 22, 23; English 1; 3 hours in (d). Second year: A second modern language; a study in Economics, English, History, Political Science or Sociology; one of the following: Astronomy, Chemistry, Physics; one of the following: Botany, Geology, Physiology, Zoology; the remaining time in Mathematics or Science. Students intending to specialize in Chemistry should continue that subject the second year of the course. Those who have Geology in view should take Geology 17 and 11, 12, 13 in their second year.

5. MATHEMATICS, PHYSICS, ASTRONOMY. First year: Mathematics 31, 32, 33, 24; French 1 or 2 or German 1 or 4; English 1; 3 hours in (d). Second year: Mathematics 41, 42, 43; Physics 2; Chemistry 7 or 44; English and a second modern language (German or French). Third year: Astronomy 1; Physics 12; and either Astronomy 2 or Physics 3; an additional science (3 hours); English or History 2 or 3 hours; German or French unless each has been studied two full years. Instead of Mathematics 31, 32, 33, 24 in the first year, Chemistry 7 or 44 and Mathematics 21, 22, 23 may be chosen, and be followed by Mathematics in the second year.

6. BIOLOGICAL SCIENCES. First year: French 1 or 2, or German 1 or 4; Chemistry 7 or 44 Botany 21, 22, 23, or Zoology 31; English 1; 3 hours in (d). Second year: Botany; Zoology 31 or 2; Physiology 1; Geology 17 or Mathematics 21, 22, 23 or Physics 11; and a second modern language. Students preparing for medicine should take Zoology 31 in the first year and Zoology 2 and Physiology 1 in the second year.

7. ECONOMICS, HISTORY. First year: Include European History 1, 2, 3 or Economics 30, 31, 32; English 1; French 1 or 2, or

German 1 or 4; 6 hours in (c). Second year: Include Economics 30, 31, 32, or 33; European History 1, 2, 3, or 14; American History 1, or Political Science 1; 4 hours in (b). In each of the third and fourth years include two courses in Economics and one in History, or two in History and one in Economics.

8. HISTORY, POLITICAL SCIENCE, ADMINISTRATION. First year: Include European History 1, 2, 3, or 14, or American History 1; English 1; 6 hours in (b), including French 1 or 2, or German 1 or 4; 3 hours in (c). Second year: Include Political Science 1 and the course in History not taken the first year, and Economics 33; 3 hours in (c). The student who has not a reading command of French or German should continue the modern language of the first year. In each of the third and fourth years include either two courses in History and one in Political Science, or one course in History and two in Political Science; and in one of these years Economics 42, 43.

9. GENERAL BUSINESS. First year: Include Economics 30, 31, 32; English 1; Geology 17; Mathematics 21, 22, 23; and one of the following: French 1 or 2, German 1 or 4, or Spanish 1 or 2. Second year: Include Economics 33; English 7 or 8; Chemistry 7 or 44, or Physics 11 or 2; American History 1, or European History 1, 2, 3; begin or continue a modern language.

10. SOCIOLOGY, PHILOSOPHY. First year: Include Economics 30, 31, 32; English 1; Physiology 1; Zoology 31; and French 1 or 2, or German 1 or 4. Second year: Include Economics 33; English 7 or 8; Physiology 1 and Philosophy 101; American History 1, or European History 1, 2, and 3; begin or continue a modern language.

11. PHILOSOPHY, EDUCATION. First year: Follow suggestions in Study Group 1, 2, or 3, except that only three hours be taken in (c), and that Psychology 1 and Philosophy 101 be taken as the subject in (d). Second year: Include Philosophy 103, 104; Psychology 2; begin or continue a modern language, a science in (c) and a study in Economics, History, Political Science or Sociology.

12. GENERAL LITERATURE. First year: Continue both languages offered for admission; English 1; 3 hours in (c); European History 1, 2, 3. Second year: Begin or continue a modern language, a science and two courses in History, including European History 14; English 7 or 8. Take a course in Philosophy throughout the third year.

## THE ARTS-LAW COURSE

A candidate for the degree of Bachelor of Arts while registered in the College of Arts, Philosophy, and Science may also register in the College of Law as a candidate for the degree of Bachelor of Laws, *provided* that at the time of seeking such registration in the College of Law (1) he has 135 term hours to his credit in the College of Arts, Philosophy, and Science, including the requisite optional subjects, and exclusive of the credit hours in Military Drill and Physical Training, and (2) has been a student in the College of Arts, Philosophy, and Science of this University at least one year, and (3) has included (or with the further work in the College of Arts, Philosophy, and Science mentioned in the next paragraph shall complete) sufficient courses to amount to thirty term hours in one or more of the five subjects: American History, European History, Economics, Sociology, and Political Science, exclusive of elementary courses in those subjects.

A student so registered in the two colleges must during his first year of double registration complete sufficient further work in the College of Arts, Philosophy, and Science to make his credits in that college aggregate 150 term hours, exclusive of the credit hours in Military Drill and Physical Training. When he has done this and has completed in the College of Law the first year of the course for the degree of Bachelor of Laws, he will be recommended for the degree of Bachelor of Arts; and when he has completed the second and third years of such course in the College of Law, he will be recommended for the degree of Bachelor of Laws.

Application to enter the combined course must be filed with the Dean of the Arts College before registration day at the beginning of the year in which the student is eligible to enter the combined work.

No credit in the College of Arts, Philosophy, and Science will be given for work done in the College of Law except as above provided, but regular fourth-year students in the former college may by special permission take a limited amount of the work in the College of Law without credit in the College of Arts, Philosophy, and Science.

The work of all students taking studies in the two colleges at the same time is under the jurisdiction of a joint committee, consisting of Professor Denney, Dean of the College of Arts, Philosophy, and Science; Dean of the College of Law; Professors Seibert and Page, and Associate Professor Bruce.

### GRADUATE COURSES

A special bulletin devoted to the work of the Graduate School may be obtained on application to the University Editor.

## ANNOUNCEMENT OF DEPARTMENTS

## AMERICAN HISTORY AND POLITICAL SCIENCE

(Office, Room 207, University Hall.)

PROFESSOR KNIGHT,<sup>†</sup> PROFESSOR SPENCER, ASSISTANT PROFESSOR ———,  
MR. DYKSTRA.

## I. AMERICAN HISTORY.

1. POLITICAL HISTORY OF THE UNITED STATES. Three credit hours. Three terms. Sec. I, *M.*, *W.*, *F.*, *at 8*. Sec. II, *M.*, *W.*, *F.*, *at 9*. Sec. III, *M.*, *W.*, *F.*, *at 1*. Assistant Professor ———, Mr. DYKSTRA.

An outline course, covering the period 1600-1900, considering political, economic, and personal aspects of American History from the origins to the present day. The Epochs series, by Thwaites, Hart, and Wilson, will be used as text-books, supplemented by outside reading in the works of Fiske, the American Statesmen series, and the American Nation series. Recitations and reports. This must precede all other courses in American History.

2. THE AMERICAN COLONIES, 1600-1763. Prerequisite, course 1. Should also be preceded or accompanied by European History 14. Lectures, quiz and reports. Three credit hours. Three terms. *M.*, *W.*, *F.*, *at 2*.

An institutional study of the origin and development of the American colonies, their progress toward union, and the causes of their separation from the British Empire.

4. THE SLAVERY STRUGGLE AND ITS RESULTS. 1800-1900. Three credit hours. Three terms. *M.*, *W.*, *F.*, *at 11*. Given biennially, alternating with course 6. Prerequisite, course 1. Professor KNIGHT.

A detailed study of the development of slavery in its connection with and influence upon constitutional and political history of the country, the rise and fall of parties, the divergence of the sections; the civil war and its results, the reconstruction of the southern states and the readjustment of society and the states to the new status of the negro. Lectures, quiz and reports.

\*6. AMERICAN DIPLOMACY, FOREIGN RELATIONS, AND EXPANSION. 1776-1900. Three credit hours. Three terms. *M.*, *W.*, *F.*, *at 11*. Prerequisite, course 1. Given biennially, alternating with course 4. Professor KNIGHT.

<sup>†</sup>Absent on leave, 1908-1909; Courses will be given as announced.

\*Not given in 1908-1909.

A systematic study of the diplomatic history of the United States; the birth, evolution, and variations of foreign relations and policy, together with a detailed investigation of the circumstances attending the various acquisitions of territory and the effect of those acquisitions on the institutions and policy of the country. Lectures, quiz and reports.

7. POLITICAL PARTIES IN THE UNITED STATES. 1789-1900. Two credit hours. Three terms. *M., F., at 10.* Prerequisite, course 1. Given biennially. Mr. DYKSTRA.

A detailed study of the rise, progress, and decline of the several parties, with special reference to their social, geographical, and personal composition, and their effect on legislation and presidential elections. Lectures, quiz and reports.

10. SEMINARY FOR RESEARCH IN AMERICAN HISTORY AND POLITICAL SCIENCE. Two credit hours. Three terms. Time to be arranged. Prerequisite, two courses in American History and at least one course in Political Science. Professors KNIGHT and SPENCER.

Each student works upon some individual subject of investigation in the field of the department. So far as possible, the subjects are so selected as to have a close interrelationship. At the meeting of the seminary the results of the investigations are presented and discussed.

11. THE TEACHING OF AMERICAN HISTORY. One credit hour. Three terms. *W., at 3.* Professor KNIGHT.

Lectures, reading and quiz upon methods of teaching history in the secondary schools, including schemes of courses, equipment, examination of text-books, followed by practice work in the preparation of lessons for teaching, and the conduct of actual recitations in American History. This course must be taken by all who expect to be recommended for teaching positions in this subject.

\*12. THE REVOLUTION AND CRITICAL PERIOD. 1763-1789. Two credit hours. Three terms. *M., F., at 10.* Prerequisite, course 1. Given biennially. Professor SPENCER.

An examination of the constitutional relations of the American colonies to the British Empire; of the political, commercial, and personal causes of the revolt, and the process by which they cooperated to bring about separation; of the radical movement and the reaction from it; of the constructive elaboration of written constitutions by the states and for the Union. Lectures, quiz and reports.

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\*Not given in 1908-1909.

13. GRADUATE COURSES. Three to ten credit hours. Professor KNIGHT.

Courses of investigation, arranged at the beginning of each year to meet the needs of individual graduate students.

14. GRADUATE SEMINARY IN AMERICAN HISTORY AND INSTITUTIONS. Open only to graduate students. Three terms. Time to be arranged. Professor KNIGHT.

## II. POLITICAL SCIENCE.

1. CONSTITUTIONAL GOVERNMENT. Three credit hours. Three terms. *M., W., F., at 9.* Prerequisite, American History 1, or European History 1, 2 and 3, or 14, or a substitute acceptable to the department. This course must precede all other courses in Political Science except 4 and 5. Professor SPENCER and Mr. DYKSTRA.

A comparative study of modern governments, American and European; their legislative, executive, and judicial institutions, central and local; the constitutional distribution of powers to governmental organs; the federal problem of nation and state. Wilson, *The State*, will be used as a text-book, supplemented by readings in Bryce, *The Federalist*, Dicey, and Lowell. Lectures, quiz and ports.

4. INTERNATIONAL LAW. Two credit hours. First and second terms. *Tu., Th., at 10.* Prerequisite, one course in European History and one course in American History. Professor KNIGHT.

A study of the principles of international law in their growth and present status, together with an examination of some of the unsettled questions in the field. Lawrence, *Principles of International Law*, to be used as a text-book, with frequent citations of authorities to be read.

5. HISTORY OF TREATIES AND MODERN DIPLOMACY. Two credit hours. Third term. *Tu., Th., at 10.* Prerequisite, course 4. Professor KNIGHT.

A study of the principal treaties since 1648, with special reference to their bearing upon the growth of international law and the progress of diplomacy. Lectures, quiz and reports.

6. THE GOVERNMENT OF COLONIES AND DEPENDENCIES. Two credit hours. Three terms. *Tu., Th., at 11.* Prerequisite, course 1. Given biennially. Professor KNIGHT.

A comparative study of the colonial policies of modern governments, the types of colonial government, and the problems of

administration of present-day dependencies. Lectures, quiz and reports.

\*8. MUNICIPAL GOVERNMENT AND PROBLEMS. Two credit hours. Three terms. *M., F., at 3.* Prerequisite, course 1. Given biennially, alternating with course 10. Professor SPENCER.

9. HISTORY OF THE ORIGIN AND DEVELOPMENT OF THE UNITED STATES CONSTITUTION. Two credit hours. Three terms. *Tu., Th., at 2.* Prerequisite, course 1. Professor KNIGHT.

A detailed study of the sources of the ideas and provisions of the Constitution, of its formulation, and of its development by usage and the interpretation of the courts.

10. POLITICAL THEORIES. Two credit hours. Three terms. *M., F., at 3.* Given biennially, alternating with course 8. Professor SPENCER.

(1) An historical sketch of the successive schools of political philosophy from Aristotle to Montesquieu, as outlined in Dunning, History of Political Theories; (2) An examination of the eighteenth and nineteenth centuries, tracing the two processes, philosophical analysis and political experience, which have combined to produce modern doctrines of sovereignty, government, and political liberty. Lectures and reports. This course is open only to graduate students and such others as shall have obtained the permission of the instructor.

12. COMPARATIVE POLITICS. Two credit hours. Three terms. *Tu., Th., at 3.* Prerequisite, course 1. Given biennially, alternating with course 13. Professor SPENCER.

An examination of those institutions, governmental and social, which have to do with the expression of the will of the state. Special attention will be given to the constituent and legislative functions, to the problems of election and representation, and the organization and methods of political parties. Lectures and reports.

\*13. COMPARATIVE ADMINISTRATION. Two credit hours. Three terms. *Tu., Th., at 3.* Prerequisite, course 1. Given biennially, alternating with course 12. Professor SPENCER.

15. INTRODUCTION TO JURISPRUDENCE. Two credit hours. Three terms. *Tu., Th., at 9.* Professor SPENCER.

A preliminary study of legal concepts. Robinson, Elements of American Jurisprudence, will be used as a text-book, supplemented by readings in the works of Blackstone, Austin, Sohm, and Holland, and in American cases.

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\*Not given in 1908-1909.

## OHIO STATE UNIVERSITY

## ANATOMY AND PHYSIOLOGY.

(Office, Room 12, Biological Hall.)

PROFESSOR BLEILE, DR. SEYMOUR, DR. BEER.

1. HUMAN ANATOMY AND PHYSIOLOGY. Three credit hours. Three terms. Sec. I, *M.*, *W.*, *F.*, at 8. Dr. SEYMOUR. Sec. II, *M.*, *Th.*, *F.*, at 10. Must be preceded or accompanied by a course in chemistry. Professor BLEILE.

3. CHEMICAL PHYSIOLOGY. Three credit hours. Third term. *Th.*, *F.*, 1 to 4. Professor BLEILE.

4. HISTOLOGY AND HISTO-CHEMISTRY. Five credit hours. Three terms. *M.*, *Tu.*, *W.*, 1 to 4. Professor BLEILE, Dr. BEER, Dr. SEYMOUR.

5. MICROSCOPY AND URINARY ANALYSIS. Two credit hours. Third term. Professor BLEILE and Dr. SEYMOUR.

9. PHYSIOLOGICAL LABORATORY. Three credit hours. Three terms. Professor BLEILE.

11. PHYSIOLOGICAL LABORATORY. Five credit hours. Three terms. Professor BLEILE.

## ANCIENT ART

(See Greek Language and Literature.)

## ASTRONOMY

(Office, The Emerson McMillin Observatory.)

PROFESSOR H. C. LORD, MR. MANSON, MR. SMITH.

1. GENERAL ASTRONOMY. Two credit hours. Three terms. *Tu.*, *Th.*, at 1. Mr. MANSON.

2. ASTRONOMY, GEODESY, AND LEAST SQUARES. Three credit hours. Three terms. *M.*, *W.*, *F.*, at 11. Professor LORD and Mr. MANSON.

3. METEOROLOGY. Two credit hours. Third term. Time to be arranged. Mr. SMITH.

7. ADVANCED ASTRONOMY. Three to five credit hours. Three terms. Prerequisite, calculus. Professor LORD.

## BACTERIOLOGY

Office, Veterinary Laboratory Building.)

PROFESSOR MORREY, MR. MCCAMPBELL, MR. GROSVENOR.

These courses in Bacteriology are open to advanced undergraduate and graduate students only. The instructor in charge must be consulted before electing.

5. GENERAL BACTERIOLOGY. Three to five credit hours. First term. Lectures, *Tu.*, at 9, or *M.*, at 11; quiz, *Th.*, at 9, or *F.*, at 11;

laboratory, *Tu.*, *Th.*, or *W.*, *F.*, 1 to 4. Professor MORREY, Mr. McCAMPBELL, Mr. GROSVENOR.

Making of media, cultures, staining methods, physiological properties.

7. PATHOGENIC BACTERIA. Three to five credit hours. Second and third terms. Lectures, *M.*, at 11; quiz, *F.*, at 11; laboratory, *W.*, *F.*, 1 to 4. Prerequisite 5. Professor MORREY, Mr. McCAMPBELL, Mr. GROSVENOR.

10. WATER EXAMINATION, SEWAGE DISPOSAL, WATER FILTRATION. Three to five credit hours. Second and third terms. Prerequisite 5. Lecture, *Tu.*, at 11; quiz, *Th.*, at 11; laboratory, *M.*, *W.*, 1 to 4. Professor MORREY.

11. BACTERIOLOGICAL CHEMISTRY (enzymes). Three to five credit hours. Second and third terms. One lecture, one quiz, two to six hours laboratory work. Prerequisite 5. Time to be arranged. Professor MORREY.

6. IMMUNITY AND SERUM THERAPY. Three to five credit hours. Three terms. Lectures, *M.*, *F.*, at 11; laboratory, to be arranged. Prerequisites 5 and 7, or equivalents. Mr. McCAMPBELL.

Preparation of toxines, antitoxins, vaccines and immune serums.

12. PATHOGENIC PROTOZOA. Three to five credit hours. Three terms. Two lectures, two to six hours' laboratory work. Prerequisites 5 and 7, or equivalents. Mr. McCAMPBELL.

15. SPECIAL PROBLEMS IN BACTERIOLOGICAL CHEMISTRY. Three to five credit hours. Three terms. Conferences, library, and laboratory work. Prerequisites 5 and 7, or equivalents. Professor MORREY.

## BOTANY

(Office, Botanical Hall.)

PROFESSOR KELLERMAN, ASSOCIATE PROFESSOR SCHAFFNER, ASSISTANT

PROFESSOR GRIGGS, DR. DACHNOWSKI, MISS DETMERS.

### UNDERGRADUATE COURSES

3. SYSTEMATIC AND PHYSIOLOGICAL BOTANY. Four credit hours. First term. *M.*, *Tu.*, *F.*, at 10. Laboratory, *Th.*, 10 to 12. Professor KELLERMAN, Miss DETMERS.

4. MEDICAL BOTANY. Two credit hours. Second term. *M.*, *Tu.*, 10 to 12. Miss DETMERS.

9. DENDROLOGY. Two credit hours. Three terms. *M.*, *Th.*, 10 to 12. Miss DETMERS.

11. LABORATORY WORK IN ECONOMIC BOTANY. Credit two to five hours. Three terms. Laboratory open daily 8 to 12.

13. PHYSIOLOGICAL, ECONOMIC AND HOUSEHOLD BOTANY. Three credit hours. Three terms. Prerequisite, Elementary Botany. Lecture, *W.*, at 11; laboratory, *M.*, *W.*, 1 to 3. Professor KELLERMAN, Miss DETMERS.

15. EDIBLE AND POISONOUS MUSHROOMS. Credit one to three hours. Laboratory and field work. Three terms. Prerequisite Elementary Botany. Laboratory open daily, 8 to 12. Professor KELLERMAN.

16. LABORATORY WORK ON MEDICINAL PLANTS, ETC. Two to five credit hours. Laboratory open daily 8 to 12. Professor KELLERMAN, Miss DETMERS.

17. FOREST BOTANY. Three terms. Four credit hours. Lectures, *Tu.*, *Th.*, at 3. Laboratory, *Tu.*, *Th.*, 1 to 3. Prerequisite, 6, 7 and 8, or 21. Associate Professor SCHAFFNER.

20. FIELD WORK ON LOCAL FLORA. Two credit hours. First or third term. *S.*, all day. Prerequisite, Elementary Botany. Assistant Professor GRIGGS.

21. GENERAL BOTANY. Three credit hours. Three terms. Lecture, *W.*, at 9; laboratory, *Tu.*, *Th.*, 8 to 10. Associate Professor SCHAFFNER.

24. LABORATORY AND FIELD WORK. Two or three credit hours. Three terms, daily, 8 to 12. Professor KELLERMAN, Associate Professor SCHAFFNER, Assistant Professor GRIGGS.

25. LABORATORY WORK IN MORPHOLOGY. Three to five credit hours. Three terms. Laboratory open daily. Prerequisite, courses 6, 7, 8, or 21. Associate Professor SCHAFFNER, Assistant Professor GRIGGS.

26. ADVANCED LABORATORY WORK IN HISTOLOGY, CYTOLOGY, AND MICROTECHNIQUE. Five credit hours. Three terms. Laboratory open daily. Prerequisite, 25. Associate Professor SCHAFFNER.

27. LABORATORY AND FIELD WORK IN SYSTEMATIC BOTANY. Three to five credit hours. Three terms. Laboratory open daily. Prerequisite, 6, 7, 8, or 21. Professor KELLERMAN.

32. MINOR INVESTIGATIONS. One to three credit hours. Three terms. Prerequisite, 6, 7, 8, or 21. Time to be arranged. Professor KELLERMAN, Associate Professor SCHAFFNER, Assistant Professor GRIGGS.

33. CURRENT LITERATURE. One to three credit hours. Three terms. Prerequisite, 6, 7, 8, or 21. Professor KELLERMAN.

35. EVOLUTION OF PLANTS. One credit hour. Lectures. Prerequisite any one year course in Botany. Three terms. *W.*, at 4. Associate Professor SCHAFFNER.

36. SEMINARY. One credit hour. Three terms. Prerequisite any one year course in Botany. Time to be arranged.

GRADUATE COURSES

28. RESEARCH WORK IN SYSTEMATIC BOTANY. Five credit hours. Three terms. Laboratory open daily. Prerequisite, 6, 7, 8, or 21. Professor KELLERMAN.

29. RESEARCH WORK IN MORPHOLOGY AND CYTOLOGY. Five or ten credit hours. Three terms. Laboratory open daily. Prerequisite, 26 or equivalent. Associate Professor SCHAFFNER.

30. MONOGRAPHIC WORK. Five or ten credit hours. Three terms. Prerequisite, 27. Professor KELLERMAN.

31. RESEARCH IN ECOLOGY. Five or ten credit hours. Three terms. Prerequisite, 25 or equivalent. Associate Professor SCHAFFNER.

CHEMISTRY

(Office, Chemical Hall.)

PROFESSOR MCPHERSON, EMERITUS PROFESSOR NORTON, ASSOCIATE PROFESSORS HENDERSON, FOULK, ASSISTANT PROFESSORS EVANS, WITHROW, MR. VOGT, MR. MORRIS, MR. SCHORGER, MR. LUCAS, AND DEPARTMENT FELLOWS.

7. ELEMENTARY CHEMISTRY. Four credit hours. First and second terms. Lecture, *M.*, at 8 or 3; quiz, *F.*, at 8, 10, 11, 1 or 3. Laboratory, *M.*, *F.*, 9 to 12; *Tu.*, *Th.*, 9 to 12; *M.*, *Tu.*, 1 to 4; *Th.*, *F.*, 1 to 4, or *W.*, 8 to 10; *S.*, 8 to 12. Assistant Professor EVANS, Assistant Professor WITHROW, Mr. VOGT, Mr. MORRIS, and department fellows.

This course is arranged for students who have not presented chemistry as an entrance requirement. Students taking this course will follow with course 12, third term.

44. GENERAL CHEMISTRY. Four credit hours. First and second terms. One lecture, one quiz and six hours laboratory work weekly. Lecture, *W.*, at 9; quiz, *F.*, at 8, 9, or 3; laboratory, same as for Chemistry 7, except the *W.*, or *S.* section is omitted. Professor MCPHERSON, Associate Professor HENDERSON, Assistant Professor EVANS, Assistant Professor WITHROW, Mr. VOGT, Mr. MORRIS, and department fellows.

This course is arranged for students who have had an acceptable course in elementary chemistry in a secondary school. Students taking this course will follow with course 12, the third term.

12. QUALITATIVE ANALYSIS. Four credit hours. Third term. One lecture, one quiz, six hours laboratory work weekly. Prerequisite, Chemistry 7 or 44. Lecture, *M.*, 8 or 3; quiz and labora-

tory hours, same as scheduled for Chemistry 7 or 44. Assistant Professor EVANS, Assistant Professor WITHROW, Mr. VOGT, Mr. MORRIS, and department fellows.

This is a general introductory course in qualitative analysis.

21. ADVANCED GENERAL CHEMISTRY. Two credit hours. First, second, and third terms. Two lectures weekly. *Tu., Th., at 9.* Prerequisite, Chemistry 7 or 44. Associate Professor HENDERSON.

This course consists of reviews and extends the work in general chemistry.

37. QUALITATIVE ANALYSIS. Four credit hours. First term. One lecture, nine hours laboratory work weekly. Time to be arranged. Prerequisite, Chemistry 7 or 44. Associate Professor FOULK, Mr. SCHORGER.

This is an elementary course in qualitative analysis similar to course 12.

20. QUANTITATIVE ANALYSIS. Four credit hours. First, second, and third terms. One lecture, nine hours laboratory work weekly. Lecture, *M., at 1.* Laboratory open afternoons. Prerequisite, Chemistry 12 or 37. Associate Professor FOULK, Mr. SCHORGER.

First principles of gravimetric and volumetric analysis. This course must be accompanied by Chemistry 40, except by special permission of the instructor. It is also desirable that it should be accompanied by Chemistry 21.

40. CHEMICAL PROBLEMS. One credit hour. First and second terms. *Th., at 11.* Associate Professor FOULK.

Extended practise in the solution of chemical problems pertaining to analytical chemistry. This course is arranged to accompany Chemistry 20.

46. ORGANIC CHEMISTRY. Two credit hours. First, second, and third terms. Two lectures weekly. *Tu., Th., at 8.* Prerequisite, courses 20, and 21, except by special permission of the instructor. Professor McPHERSON.

General course in organic chemistry. Whenever possible this course should be accompanied by Chemistry 47.

47. ORGANIC CHEMISTRY. Two or three credit hours. First, second, and third terms. Six or nine hours laboratory work weekly. Laboratory open afternoons. This course must be accompanied or preceded by course 46. Professor McPHERSON, Mr. LUCAS.

Preparation of typical organic compounds.

15. SANITARY ANALYSIS. Four credit hours. Second term. Two lectures, four hours laboratory work weekly. Lectures, *Tu.,*

*Th.*, at 10. Laboratory open afternoons. Prerequisite, Chemistry 20. Associate Professor FOULK.

A study of the methods of sanitary water analysis and the interpretation of results.

48. **QUALITATIVE ANALYSIS.** Advanced course. Three to five credit hours. First term. One lecture, six to twelve hours laboratory work weekly. Time to be arranged. Prerequisite, Chemistry 20. Associate Professor FOULK.

Extended work in general qualitative analysis; practise with insoluble substances; use of the spectroscope, etc. This course should be followed with course 49, second and third terms.

49. **QUANTITATIVE ANALYSIS.** Advanced course. Three to five credit hours. Second and third terms. One lecture, four to twelve hours laboratory work weekly. Time to be arranged. Prerequisite, Chemistry 20. Associate Professor FOULK.

Continuation of Chemistry 20; more difficult analytical methods.

30. **PHYSICAL CHEMISTRY.** Three credit hours. First and second terms. Three lectures weekly. *M., W., F., at 8.* Prerequisite, Chemistry 20, 21; also course 46, except by special permission of the instructor. Associate Professor HENDERSON.

A general course in the theory of chemistry.

50. **PHYSICAL CHEMISTRY.** Three credit hours. Third term. Nine hours laboratory work weekly. Time to be arranged with instructor. Prerequisite, Chemistry 30. Associate Professor HENDERSON.

A laboratory course in selected physical-chemical exercises.

41. **PHYSICAL CHEMISTRY.** Three credit hours. First, second, and third terms. Nine hours' laboratory work weekly. Laboratory open afternoons. Prerequisite, Chemistry 30. Associate Professor HENDERSON.

An extended course in physical-chemical exercises. While this course extends through the year, students may elect any one or two terms.

32. **INDUSTRIAL CHEMISTRY.** Four credit hours. First and second terms. Two lectures, six hours laboratory work weekly. *Tu., Th., at 8.* Laboratory, *W., Th., 1 to 4.* Prerequisite, Chemistry 20, 21, 46, 47. Assistant Professor WITHROW.

Industrial applications of chemistry.

35. **RARE ELEMENTS.** Three credit hours. Third term. Three lectures weekly. *M., W., F., at 8.* Prerequisite, Chemistry 20 and 21; also 40, except by special permission of the instructor. Associate Professor HENDERSON.

71. TECHNICAL ANALYSIS. Four credit hours. Third term. One lecture, nine hours laboratory work weekly. Lecture, *Tu.*, at 11. Laboratory open afternoons. Prerequisite, course 20. Associate Professor FOULK.

The chemical examination of various commercial products.

17. INORGANIC PREPARATIONS. Three credit hours. Third term. Nine hours laboratory work weekly. Laboratory open afternoons. Prerequisite, courses 20, 21, and the permission of the instructor. Associate Professor HENDERSON.

Practise in preparing some typical inorganic substances.

27. ORGANIC CHEMISTRY. Advanced course. Three to five credit hours. First, second, and third terms. Library and laboratory work. Time arranged with instructor. Prerequisite, courses 46 and 47. Professor MCPHERSON.

Extended practise in the preparation of typical organic compounds, their purification and analysis.

25. HISTORICAL CHEMISTRY. Three credit hours. Second term. Three lectures weekly, *M.*, *Tu.*, *Th.*, at 11. Prerequisite, permission of the instructor. Associate Professor HENDERSON.

This course is for advanced students only.

26. CHEMICAL SEMINARY. One credit hour. First, second, and third terms. *W.*, at 11.

Discussion of papers. For advanced and graduate students.

36. THE TEACHING OF CHEMISTRY. Two credit hours. Third term. Two lectures weekly. Time to be arranged with instructor. Prerequisite, permission of the instructor. Professor MCPHERSON.

72. APPLIED ELECTRO-CHEMISTRY. Three credit hours. Second and third terms. One lecture, six hours laboratory work weekly. Time to be arranged with instructor. Prerequisite, courses 20, 21, 46, 47. Assistant Professor WITHROW.

28. ORGANIC CHEMISTRY. Two credit hours. Third term. Two lectures weekly. Prerequisite permission of the instructor in charge. Professor MCPHERSON.

This course is arranged for graduate students and is offered biennially. Subject for 1908-1909, "Fischer's Work on the Proteids."

73. INORGANIC PREPARATIONS. Three credit hours. First, second, and third terms. Library and laboratory work. Time to be arranged with instructor. Prerequisite, permission of the instructor in charge. Associate Professor HENDERSON.

An extended course in the preparation of typical inorganic compounds, including those of the rare elements. The course is ar-

ranged for advanced students only. While the course extends through the year, the students may elect any one or two terms.

74. INORGANIC CHEMISTRY. Two credit hours. First term. Two lectures weekly. *Tu., Th., at 8.* Prerequisite, permission of the instructor. Associate Professor HENDERSON.

This course is arranged for graduate students only. Subject for 1908-1909, "The Bearing of Radio-activity on Chemical Theory."

75. ANALYTICAL CHEMISTRY. Two credit hours. Second term. Two lectures weekly. Time to be arranged. Prerequisite, permission of the instructor. Associate Professor FOULK.

This course is arranged for graduate students only and consists in a discussion of special topics in analytical chemistry. Subject for 1908-1909: "Selected topics pertaining to analytical chemistry, the atomic weights, adsorption, theory of indicators and precipitation."

\*76. ORGANIC CHEMISTRY. Two credit hours. Third term. Two lectures weekly. Time to be arranged. Prerequisite, permission of the instructor in charge. Assistant Professor EVANS.

This course is arranged for graduate students only and is offered biennially, alternating with course 28.

77. THE READING OF CHEMICAL LITERATURE. Two credit hours. First term. Time to be arranged. Prerequisite, German 1. Associate Professor FOULK.

The main object of this course is to afford practise in the rapid reading of German chemical literature, the selections being made with special reference to the technical terms of the science.

29. RESEARCH WORK. Five to ten credit hours. First, second and third terms. Library and laboratory work. Time arranged with instructor. Professor MCPHERSON, Associate Professors HENDERSON and FOULK, Assistant Professors EVANS and WITHROW.

#### ECONOMICS AND SOCIOLOGY (Office, Room 24, University Hall.)

PROFESSOR HAGERTY, PROFESSOR BOWNOCKER, ASSOCIATE PROFESSOR

HAMMOND, ASSISTANT PROFESSOR MCKENZIE, ASSISTANT

PROFESSOR DUNCAN, MR. GEPHART, MR. WALLIS.

#### ECONOMICS

Students who plan to do considerable work in Economics should take courses 30, 31, and 32 as introductory to all other courses, and should take at the same time Geology 17. Those who intend to take but one year of work in Economics and Sociology should take Economics 33.

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\*Not given in 1908-1909.

30. INDUSTRIAL AND SOCIAL HISTORY OF ENGLAND. Three credit hours. First term. Sec. I, *M., W., F.*, at 8; Sec. II, *M., W., F.*, at 9. Open only to first and second-year students. Assistant Professor MCKENZIE, and Mr. GEPHART.

Text-book, lectures, and assigned readings.

31. INDUSTRIAL AND SOCIAL HISTORY OF THE UNITED STATES. Three credit hours. Second term. Sec. I, *M., W., F.*, at 8; Sec. II, *M., W., F.*, at 9; Sec. III, *M., W., F.*, at 2. Open only to first and second year students. Assistant Professor MCKENZIE and Mr. GEPHART.

Text-book, lectures, and required readings.

32. COMMERCIAL AND ECONOMIC GEOGRAPHY. Three credit hours. Third term. Sec. I, *M., W., F.*, at 8; Sec. II, *M., W., F.*, at 9; Sec. III, *M., W., F.*, at 2. Open only to first and second year students. Assistant Professors MCKENZIE, and Mr. GEPHART.

Text-book, lectures, and assigned readings.

33. PRINCIPLES OF ECONOMICS. Three credit hours. Three terms. Sec. I, *M., W., F.*, at 8; Sec. II, *M., W., F.*, at 9; Sec. III, *M., W., F.*, at 9; Sec. IV, *M., W., F.*, at 1. Not open to first year students. Should precede all courses in Economics and Sociology except Economics 30, 31, and 32, and Sociology 1. Associate Professor HAMMOND, Assistant Professor DUNCAN, and Mr. GEPHART.

Text-book, collateral readings, and individual investigations.

34. MONEY AND BANKING. Three credit hours. First term. Prerequisite, course 33. *M., W., F.*, at 2. Assistant Professor DUNCAN.

35. BANKING PRACTICE. Three credit hours. Second term. Prerequisite, course 34. *M., W., F.*, at 2. Assistant Professor DUNCAN.

36. THE MONEY MARKET. Three credit hours. Third term. Prerequisite, course 35. *M., W., F.*, at 2. Assistant Professor DUNCAN.

\*37. INDUSTRIAL ORGANIZATION. Three credit hours. First term. Prerequisite, course 33. *M., W., F.*, at 9. Associate Professor HAMMOND.

A study of the development and internal organization of modern manufacturing enterprises with some consideration of the forces determining their location. Lectures, individual reports, and visits of inspection to local plants.

\*38. CORPORATION FINANCE AND ORGANIZATION. Three credit

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\*Not given in 1908-1909.

hours. Second term. Prerequisite, course 34, or 37. *M., W., F., at 9.* Associate Professor HAMMOND.

Methods of corporate organization and management, corporate capitalization and securities. The tendencies toward industrial consolidation, the forms and methods of the modern trust.

\*51. THE MONOPOLY PROBLEM. Three credit hours. Third term. Prerequisite, course 38. *M., W., F., at 9.* Associate Professor HAMMOND.

Monopolistic tendencies in modern industry. The problem of public regulation and control of industrial monopolies.

\*40. MERCANTILE INSTITUTIONS. Three credit hours. First and second terms. Prerequisite, course 33. *M., W., F., at 11.* Professor HAGERTY.

The evolution and organization of mercantile institutions, with a study of the methods of commercial distribution and sale of products, including advertising, selling agencies, produce exchanges, etc.

\*41. COMMERCIAL CREDIT. Three credit hours. Third term. Prerequisite, course 40. *M., W., F., at 11.* Professor HAGERTY.

Mercantile agencies, credit men's associations, bankruptcy legislation, drafts, bills of exchange, bills of lading, and other credit instruments.

42. PUBLIC FINANCE. Two credit hours. First and second terms. Prerequisite, course 33. *Tu., Th., at 2.*

Public expenditures, revenue and debts, financial organization and administration.

43. FINANCIAL HISTORY OF THE UNITED STATES. Two credit hours. Third term. Prerequisite, course 33. *Tu., Th., at 2.*

A study of the fiscal and monetary history of the country from colonial times to the present.

44. TRANSPORTATION. Three credit hours. three terms. Prerequisite, course 33. *M., W., F., at 9.* Associate Professor HAMMOND.

The history and public character of transportation; water transportation; railway organization and administration; railway capitalization, rates, pools, mergers and consolidations; railway commissions and public control; government ownership of railroads.

45. SEMINARY IN ECONOMICS. Two credit hours. Three terms. *Tu., 3 to 5.* Associate Professor HAMMOND.

A course of investigation and research open to graduates and such advanced undergraduates as receive special permission. Rec-

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\*Not given in 1908-1909,

ommended to students who have had two or three years' work in Economics.

48. ACCOUNTING AND STATISTICS. Two credit hours. Three terms. Prerequisite, course 33. *Tu., Th., at 8.* Assistant Professor DUNCAN.

An introduction to practical accounting, including the analysis and interpretation of business statements. Methods of statistical investigation and the use of statistics in commercial and industrial enterprises.

52. LABOR LEGISLATION. Three credit hours. First term. Prerequisite, course 33. *M., W., F., at 1.* Associate Professor HAMMOND.

A study of the labor laws of the United States and the principal foreign countries, with some consideration of their economic and social causes and results.

39. LABOR ORGANIZATIONS AND EMPLOYERS' ASSOCIATIONS. Three credit hours. Second term. Prerequisite, course 33. *M., W., F., at 1.* Associate Professor HAMMOND.

The methods by which laborers and employers organize to secure control of the labor market. Trade union policies and methods. Collective bargaining. Industrial arbitration.

53. REMUNERATION OF LABOR. Three credit hours. Third term. Prerequisite, course 33. *M., W., F., at 1.* Associate Professor HAMMOND.

A study of the wage system, with its attempted modifications. Time, piece, and progressive wages; profit-sharing, labor co-partnership.

\*54. INSURANCE. Two credit hours. Three terms. Prerequisite, course 33. *Tu., Th., at 10.* Mr. GEPHART.

Principles of life insurance and its economic and social significance. Kinds of companies, policies, and policy contracts. Public regulation of life insurance companies. Fire, marine, accident, old age and other forms of insurance.

\*55. MUNICIPAL ECONOMICS. Two credit hours. First and second terms. Prerequisite, course 33. *M., F., at 10.* Mr. GEPHART.

Growth of cities in population and functions. Economic and social activities and the problems of modern cities. Private versus public ownership and operation of public utilities. Experience of American cities compared with that of foreign municipalities.

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\*Not given in 1908-1909.

\*56. MUNICIPAL FINANCE. Two credit hours. Third term. Prerequisite, course 55. *M., F., at 10.* Mr. GEPHART.

City expenditures; revenues from public industries, taxes, licenses, special assessments; city indebtedness, its growth and management; municipal statistics and accounts.

\*57. AMERICAN INDUSTRIES. Three credit hours. Second and third terms. Prerequisite, course 33. *M., W., F., at 2.* Assistant Professor DUNCAN.

Typical American industries described with reference to their industrial processes and their accounting and administrative methods. Methods employed in these industries for determining costs of production, the reduction of labor costs, increasing output, and other managerial problems.

58. ADVANCED ACCOUNTING AND AUDITING. Three credit hours. Three terms. *M., W., F., at 8.* Assistant Professor DUNCAN.

Accounting systems for various types of industrial and financial institutions. The work of the certified public accountant and auditor, their problems and duties.

59. ECONOMIC RESOURCES OF THE UNITED STATES. Two credit hours. Three terms. Given in 1908-1909, and thereafter in alternate years. Prerequisite, Geology 17 and Economics 33. *Tu., Th., at 9.* Professor BOWNOCKER.

Metals, fuels, soils, etc., their distribution, abundance and uses. Incidental treatment of their origin and geological relations.

#### SOCIOLOGY

These courses are not open to first-year students. It is recommended that course 1 be preceded by Economics 30, 31, 32, or 33, and Psychology 1, or Zoology 31.

1. PRINCIPLES OF SOCIOLOGY. Three credit hours. Three terms. Sec. I. *M., W., F., at 8;* Sec. II, *M., W., F., at 9.* Professor HAGERTY and Assistant Professor MCKENZIE.

A study of the fundamental principles of sociology. Text-book and lectures.

2. HISTORY OF THE FAMILY. Three credit hours. Second term. Prerequisite, course 1. *M., W., F., at 8.* Mr. WALLIS.

A study of the matrimonial institutions of primitive society and the evolution of the family through the Greek, Roman, Mediæval, and Modern periods.

4. DEPENDENTS AND DEFECTIVES. Three credit hours. First

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\*Not given in 1908-1909.

term. Prerequisite, course 1. *Tu., Th., F., at 10.* Professor HAGERTY.

5. CRIMINOLOGY. Three credit hours. Second term. Prerequisite, course 4. *Tu., Th., F., at 10.* Professor HAGERTY.

A study of criminality, the causes of crime, means of diminishing crime, prison management and prison reform.

6. ORGANIZED PHILANTHROPY. Three credit hours. Third term. Prerequisite, course 5. *Tu., Th., F., at 10.* Professor HAGERTY.

A study of the various institutions or agencies organized to prevent dependency and crime, such as charity organizations, social settlements, the various church agencies, etc.

8. THE INDIAN. A study of primitive man. Three credit hours. First term. *M., W., F., at 1.* Assistant Professor MCKENZIE.

9. THE NEGRO. A study of tropic man. Three credit hours. Second term. *M., W., F., at 1.* Assistant Professor MCKENZIE.

10. THE IMMIGRANT. Three credit hours. Third term. *M., W., F., at 1.* Assistant Professor MCKENZIE.

7. SEMINARY IN SOCIOLOGY. Two credit hours. Three terms. *Tu., 3 to 5.* Open to graduates and advanced undergraduates. Prerequisite, course 1. Professor HAGERTY.

This course is recommended to students who have had one or two years work in Sociology.

\*11. SOCIAL REFORM AND SOCIALISM. Three credit hours. Three terms. Prerequisite, courses 1, 2, and 3, or Economics 33. *M., W., F., at 9.* Assistant Professor MCKENZIE.

Nineteenth century attempts at social reform, the theory of socialism, and the social function of the church.

12. BIBLICAL SOCIOLOGY. Three credit hours. First term. *M., W., F., at 8.* Mr. WALLIS.

A study of Old Testament History, showing the development of the idea of God in its relations to ancient Hebrew society.

13. ARYAN INSTITUTIONS. Three credit hours. Third term. *M., W., F., at 8.* Mr. WALLIS.

A study of the social institutions of the race to which the English-speaking peoples belong.

14. ADVANCED SOCIOLOGY. Two credit hours. Three terms. *M., W., at 2.* Assistant Professor MCKENZIE.

A rapid review of social theories from Plato to Spencer, with a more detailed study of the writings of recent sociologists.

## GRADUATE COURSES IN ECONOMICS AND SOCIOLOGY

46. RESEARCH WORK. Two credit hours. Three terms. Hours to be arranged.

In this work, as far as possible, only original sources are used, and investigations are made from real life. The aim is to set before each student the accomplishment of a task of extending in some degree, however slight, the boundaries of economic and sociological knowledge. Meetings are arranged with the instructor throughout the year.

47. ADVANCED ECONOMICS AND SOCIOLOGY. One to ten credit hours. Three terms. Hours to be arranged with the students individually.

Open to undergraduates only on permission of the head of the department. The aim of these courses is to offer the students an opportunity to specialize to any degree he may desire along the various lines within the field of the department. Elections will naturally fall under the following heads: (a) Theoretical problems. (b) Historical problems. (c) Practical problems. (d) Finance. (e) Commerce. (f) Sociology—theoretical or practical. (g) Accounting and Statistics.

50. DISTRIBUTION OF WEALTH. Three credit hours. Three terms. This course is intended for graduates, but advanced undergraduates may be admitted by permission of the instructor. *M., W., F., at 11.* Professor HAGERTY.

## ENGLISH

(Office, Room 116, University Hall.)

PROFESSOR DENNEY, PROFESSOR BARROWS,† ASSOCIATE PROFESSOR TAYLOR,

ASSISTANT PROFESSOR GRAVES, ASSISTANT PROFESSOR MCKNIGHT,

ASSISTANT PROFESSOR DUNCAN, MR. MCKINNEY, MR.

BLANCHARD, MISS HUTSINPILLAR

## UNDERGRADUATE COURSES

1. PARAGRAPH WRITING AND ANALYSIS OF PROSE. Two credit hours. Three terms. *Tu., Th., or W., F., at 8; Tu., Th., at 9, 10, or 1.* Professor DENNEY, Associate Professor TAYLOR, Assistant Professor GRAVES, Assistant Professor MCKNIGHT, Assistant Professor DUNCAN, Mr. MCKINNEY, Miss HUTSINPILLAR.

3. BRIEF MAKING AND ARGUMENTATION. Two credit hours. First, second, and third terms. *Tu., Th., at 9, 10, 11; M., F., at 10;*

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†Died January 19, 1908.

*W., F., at 1.* Prerequisite, course 1. Professor DENNEY, Assistant Professor DUNCAN, Mr. McKINNEY, Mr. BLANCHARD.

3a. DEBATING. Two credit hours. First, second, and third terms. *Tu., Th., at 1.* Prerequisite, course 1. Mr. BLANCHARD.

Practical application of the principles of argumentation. Leading questions of the day debated in class.

5. ADVANCED COMPOSITION. Two credit hours. First, second, and third terms. *Tu., Th., at 11.* Prerequisite, course 1. Assistant Professor GRAVES.

7. INTRODUCTION TO ENGLISH LITERATURE. Three credit hours. Three terms. *M., W., F., at 8 or 9.* No prerequisite course. Either 7 or 8 may be chosen, but not both. Professor BARROWS.

8. GENERAL SURVEY OF ENGLISH LITERATURE. Three credit hours. Three terms. *M., W., F., 11 or 3.* No prerequisite course. Either 7 or 8 may be chosen, but not both. Assistant Professor GRAVES, Assistant Professor DUNCAN.

10. FROM SPENCER TO MILTON. Two credit hours. First term. *Tu., Th., at 11.* Prerequisite, course 7 or 8. Miss HUTSINPILLAR.

11. FROM DRYDEN TO POPE. Two credit hours. Second term. *Tu., Th., at 11.* Prerequisite, course 7 or 8. Miss HUTSINPILLAR.

12. THE AGE OF JOHNSON. Two credit hours. Third term. *Tu., Th., at 11.* Prerequisite, course 7 or 8. Miss HUTSINPILLAR.

13. BURNS. Two credit hours. First term. *Tu., Th., at 2.* Prerequisite, course 7 or 8. Assistant Professor DUNCAN.

17. BYRON. Two credit hours. Second term. *Tu., Th., at 2.* Prerequisite, course 7 or 8. Assistant Professor DUNCAN.

21. SHELLEY AND KEATS. Two credit hours. Third term. *Tu., Th., at 2.* Prerequisite, course 7 or 8. Assistant Professor DUNCAN.

14. BURKE TO DEQUINCEY. Four credit hours. First term. *M., Tu., Th., F., at 10.* Prerequisite, course 7 or 8. Professor DENNEY.

15. CARLYLE AND RUSKIN. Four credit hours. Second term. *M., Tu., Th., F., at 10.* Prerequisite, course 7 or 8. Professor DENNEY.

16. ARNOLD, NEWMAN, AND PATER. Four credit hours. Third term. *M., Tu., Th., F., at 10.* Prerequisite, course 7 or 8. Professor DENNEY.

18. WORDSWORTH AND COLERIDGE. Three credit hours. First term. *M., W., F., at 9.* Prerequisite, course 7 or 8. Associate Professor TAYLOR.

19. TENNYSON. Three credit hours. Second term. *M., W., F., at 9.* Prerequisite, course 7 or 8. Associate Professor TAYLOR.

20. BROWNING. Three credit hours. Third term. *M., W., F., at 9.* Prerequisite, course 7 or 8. Associate Professor TAYLOR.

\*22. THE ENGLISH BIBLE. The Pentateuch and Earlier Histories. One credit hour. Three terms. *Th., at 8.* No prerequisite course. Professor BARROWS.

23. THE ENGLISH BIBLE. Later Histories, Poetry, and Prophecies. One credit hour. Three terms.

[24. THE ENGLISH BIBLE. The New Testament. One credit hour. Three terms. Not offered until 1909-1910.]

26. HISTORY OF THE ENGLISH LANGUAGE. Two credit hours. First term. *M., F., at 10.* No prerequisite course. Assistant Professor McKNIGHT.

27. ENGLISH WORDS. Two credit hours. Second and third terms. *M., F., at 10.* No prerequisite course. Assistant Professor McKNIGHT.

28. OLD AND MIDDLE ENGLISH. Three credit hours. Three terms. *M., W., F., at 9.* No prerequisite course. Assistant Professor McKNIGHT.

30. LITERATURE BEFORE CHAUCER. Three credit hours. First term. *M., W., F., at 11.* Open only to juniors, seniors, and graduates. Assistant Professor McKNIGHT.

31. CHAUCER. Three credit hours. Third term. *M., W., F., at 11.* Open only to juniors, seniors, and graduates. Assistant Professor McKNIGHT.

32. ARTHURIAN STORY. Three credit hours. Second term. *M., W., F., at 11.* Open only to juniors, seniors, and graduates. Assistant Professor McKNIGHT.

35. SHAKESPEARE. Three credit hours. Three terms. *M., W., F., at 11.* Prerequisite, course 7 or 8. Professor BARROWS.

36. THE DRAMA OTHER THAN SHAKESPEARE. Three credit hours. First and second terms. *M., W., F., at 2.* Prerequisite, course 7 or 8. Professor BARROWS.

37. MILTON. Epic and Prose. Three credit hours. Third term. *M., W., F., at 2.* Prerequisite, course 7 or 8. Professor BARROWS.

38. THE NOVEL. Eighteenth Century. Four credit hours. First term. *M., Tu., Th., F., at 10.* Prerequisite, course 7 or 8. Associate Professor TAYLOR.

39. THE NOVEL. First Half of Nineteenth Century. Four credit hours. Second term. *M., Tu., Th., F., at 10.* Prerequisite, course 7 or 8. Associate Professor TAYLOR.

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\*Not given in 1908-1909.

40. THE NOVEL. Last Half of Nineteenth Century. Four credit hours. Third term. *M., Tu., Th., F., at 10.* Prerequisite, course 7 or 8. Associate Professor TAYLOR.

43. POETICS. Three credit hours. First term. *M., W., F., at 9.* Prerequisite, course 3 or 5, and 7 or 8. Assistant Professor GRAVES.

44. SHORT STORY WRITING. Three credit hours. Second and third terms. *M., W., F., at 9.* Prerequisite, course 3 or 5, and 7 or 8. Assistant Professor GRAVES.

45. AMERICAN LITERATURE. Two credit hours. Three terms. *Tu., Th., at 8.* No prerequisite course. Associate Professor TAYLOR.

48. THE TEACHING OF ENGLISH. Two credit hours. Three terms. *W., 3 to 5.* Open only to seniors and graduates. Professor DENNEY.

49. SEMINARY. Two credit hours. Three terms. *M., at 4.* Open only to seniors and graduates. Must be elected for the year. Professor DENNEY.

#### GRADUATE COURSES

61. THEORIES OF RHETORIC. *M., at 2.* Professor DENNEY.

62. OLD AND MIDDLE ENGLISH PHILOLOGY. *F., at 4.* Assistant Professor MCKNIGHT.

63. LITERARY PROBLEMS. *Tu., at 4.* Professor BARROWS.

64. COMPARATIVE CRITICISM. Topic for 1908-9. Current Literature. *Th., at 3.* Associate Professor TAYLOR.

#### ENTOMOLOGY

(See Zoology and Entomology.)

#### EUROPEAN HISTORY

(Office, Room 204, University Hall.)

PROFESSOR SIEBERT, ASSISTANT PROFESSOR MCNEAL.

1. THE EARLY MIDDLE AGES. Three credit hours. First term. Sec. I, *M., W., F., at 9.* Professor SIEBERT. Sec. II, *M., W., F., at 1.* Assistant Professor McNEAL. Sec. III, *M., W., F., at 2.* Assistant Professor McNEAL. Sec. IV, *M., W., F., at 11.* Professor SIEBERT.

2. RENAISSANCE. Three credit hours. Second term. Sec. I, *M., W., F., at 9.* Professor SIEBERT. Sec. II, *M., W., F., at 1.* Assistant Professor McNEAL. Sec. III, *M., W., F., at 2.* Assistant Professor McNEAL. Sec. IV, *M., W., F., at 11.* Professor SIEBERT.

3. MODERN EUROPE. Three credit hours. Third term. Sec. I, *M., W., F., at 9.* Professor SIEBERT. Sec. II, *M., W., F., at 1.* Assistant Professor MCNEAL. Sec. III, *M., W., F., at 2.* Assistant Professor MCNEAL. Sec. IV, *M., W., F., at 11.* Professor SIEBERT.

4. POLITICAL AND CONSTITUTIONAL HISTORY OF ENGLAND. Three credit hours. Three terms. *Tu., Th., F., at 10.* Prerequisite, course 14, or courses 1, 2, 3. Professor SIEBERT.

5. HISTORY OF GREECE TO THE ROMAN CONQUEST. Two credit hours. First term. *Tu., Th., at 9.* Assistant Professor MCNEAL.

6. HISTORY OF ROME. Two credit hours. Second and third terms. *Tu., Th., at 9.* Assistant Professor MCNEAL.

7. PERIOD OF THE PROTESTANT REFORMATION. Three credit hours. First term. *M., W., F., at 2.* Prerequisite, courses 1, 2, and 3, or course 14. Professor SIEBERT.

8. THE FRENCH REVOLUTION AND NAPOLEONIC PERIODS, 1789-1815. Three credit hours. Second term. *M., W., F., at 2.* Prerequisite, courses 1, 2, and 3, or course 14. Professor SIEBERT.

9. HISTORY OF EUROPE IN THE NINETEENTH CENTURY. Three credit hours. Third term. *M., W., F., at 2.* Prerequisite, courses 1, 2, and 3, or course 14. Professor SIEBERT.

\*11. THE EASTERN QUESTION. Two credit hours. First term. *Tu., Th., at 11.* Prerequisite, courses 1, 2, and 3, or equivalent. Professor SIEBERT.

\*10. HISTORY OF EUROPEAN COLONIES. Two credit hours. Second and third terms. *Tu., Th., at 11.* Prerequisite, courses 1, 2, and 3, or course 14. Professor SIEBERT.

13. TEACHERS' COURSE IN EUROPEAN HISTORY. One or two credit hours. Three terms. Time to be arranged. Professor SIEBERT and Assistant Professor MCNEAL.

14. HISTORY OF ENGLAND. Three credit hours. Three terms. *M., W., F., at 8.* Introductory course. Assistant Professor MCNEAL.

15. HISTORY OF NORTHEASTERN EUROPE. Two credit hours. First and second terms. *Tu., Th., at 11.* Prerequisite, courses 1, 2, and 3, or course 14.

16. EUROPE AND THE ASIATIC QUESTION. Two credit hours. Third term. *Tu., Th., at 11.* Prerequisite, courses 1, 2, and 3, or course 14.

21. ADVANCED WORK IN MODERN EUROPEAN HISTORY. Investigations of Special Topics. One to ten credit hours. Three terms.

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\*Not given in 1908-1909.

Open only by permission of instructor. Time to be arranged. Professor SIEBERT.

22. ADVANCED WORK IN MEDIAEVAL EUROPEAN HISTORY. One to ten credit hours. Three terms. Topics may be selected from the following list: (a) Mediæval Civilization. (b) Feudal Institutions. (c) Period of the Renaissance. (d) Study of Mediæval Documents. Open only by permission of instructor. Time to be arranged. Assistant Professor McNEAL.

## GEOLOGY

(Office, Orton Hall.)

PROFESSOR PROSSER, PROFESSOR BOWNOCKER, ASSISTANT  
PROFESSOR HUBBARD.

6. ECONOMIC GEOLOGY. Three credit hours. Second term. *M., W., F., at 11.* Prerequisite, courses 11 and 12. Professor BOWNOCKER.

11. INORGANIC GEOLOGY. Three credit hours. First term. *M., W., F., at 9.* Prerequisite, Chemistry 1. Professor BOWNOCKER.

12. HISTORICAL GEOLOGY. Three credit hours. Second term. Lectures, *M., W., F., at 9.* Prerequisite, course 11. Professor PROSSER.

13. FIELD GEOLOGY. Three credit hours. Third term. Lectures, *M., at 9.* Field trips, *S.* Laboratory open *W., at 9.* Prerequisite, courses 11 and 12. Professor PROSSER.

14. PALEONTOLOGY. Two to five credit hours. Three terms. Laboratory open *M., Tu., W., Th., F., 1 to 4.* Prerequisite, courses 11 and 12. Professor PROSSER.

15. AREAL GEOLOGY. Two to five credit hours. First and third terms. Field work, *S.* Laboratory open, *M., Tu., W., Th., F., 1 to 4.* Prerequisite, courses 11, 12, 13, and 14. Professor PROSSER and Assistant Professor HUBBARD.

17. PHYSIOGRAPHY. Three credit hours. Three terms. Open to Freshmen and Sophomores only. First term. Sec. I, *M., W., F., at 1.* Field trips, Saturday morning. Professor BOWNOCKER. Sec. II, *M., Tu., Th., at 10.* Field trips, Saturday morning. Assistant Professor HUBBARD. Second term. Sec. I, *W., F., at 1.* Professor BOWNOCKER. Sec. II, *Tu., Th., at 10.* Assistant Professor HUBBARD. Laboratory (both sections), *M., Tu., W., or Th., 1 to 4.* One hour fixed; two hours to be arranged. Assistant Professor HUBBARD. Third term, Sec. I, *M., W., F., at 1.* Field trips, Saturday morning. Professor BOWNOCKER. Sec. II, *M., Tu., Th., at 10.* Field trips, Saturday morning. Assistant Professor HUBBARD.

physiographic features of the earth's surface, the ocean and the atmosphere. Lectures and assigned readings, illustrated with models and lantern views. In the fall and spring terms, three field trips will be made, each trip taking the place of a recitation. In the winter term, the work will consist of two lectures, recitations or quizzes, and one laboratory period per week.

18. **GEOGRAPHIC GEOLOGY.** Three credit hours. Third term. Time to be arranged. Prerequisite, courses 11 or 17. Professor BOWNOCKER.

\*19. **PETROGRAPHY.** Two credit hours. Three terms. Laboratory open *M.*, *Tu.*, *W.*, *Th.*, *F.*, 1 to 4. Prerequisite, Chemistry 1, Metallurgy 2, and Geology 11. Professor BOWNOCKER.

21. **ADVANCED PHYSIOGRAPHY.** Three or more credit hours. Three terms. *M.*, at 4, and other hours to be arranged. Prerequisite, course 17, or courses 11, 12, and 13, or their equivalents. Assistant Professor HUBBARD.

Conferences and reports, reviews of literature, directed and independent excursions and laboratory work.

#### FOR GRADUATES ONLY

16. **ADVANCED HISTORICAL GEOLOGY.** Three to five credit hours. Three terms. Time to be arranged. Laboratory open *M.*, *Tu.*, *W.*, *Th.*, *F.*, 1 to 4. Prerequisite, courses 11, 12, 13, and 14. Professor PROSSER.

20. **RESEARCH WORK.** Three to five credit hours. Three terms. Prerequisite, preceding courses in inorganic or historical geology. Professor PROSSER, Professor BOWNOCKER, or Assistant Professor HUBBARD.

### GERMANIC LANGUAGES AND LITERATURES

(Office, Room 317, University Hall.)

PROFESSOR RHOADES, ASSOCIATE PROFESSOR VILES, ASSISTANT PROFESSOR EISENLOHR, DR. MAY THOMAS, DR. BUSSE.

1. **ELEMENTARY GERMAN.** Four credit hours. Three terms. Sec. I, *Tu.*, *W.*, *Th.*, *F.*, at 9. Sec. II, *M.*, *Tu.*, *Th.*, *F.*, at 10. Sec. III, *M.*, *Tu.*, *Th.*, *F.*, at 10. Sec. IV, *M.*, *T.*, *Th.*, *F.*, at 11. Sec. V, *M.*, *Tu.*, *Th.*, *F.*, at 11. Sec. VI, *Tu.*, *W.*, *Th.*, *F.*, at 2. Sec. VII, *Tu.*, *W.*, *Th.*, *F.*, at 3.

2. **SCIENCE READING.** Four credit hours. Third term. Sec. I, *Tu.*, *W.*, *Th.*, *F.*, at 8. Sec. II, *Tu.*, *W.*, *Th.*, *F.*, at 9. Prerequisite, course 4 for the first and second terms. Assistant Professor EISENLOHR.

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\*Not given in 1908-1909.

4. INTERMEDIATE GERMAN. Four credit hours. Three terms. Sec. I, *M.*, *Tu.*, *Th.*, *F.*, at 10. Sec. II, *M.*, *Tu.*, *Th.*, *F.*, at 11. Sec. III, *Tu.*, *W.*, *Th.*, *F.*, at 2. Sec. IV, *Tu.*, *W.*, *Th.*, *F.*, at 8. Sec. V, *Tu.*, *W.*, *Th.*, *F.*, at 9. Sections IV and V will be replaced in the third term by course 2.

9. CLASSICAL DRAMA. Three credit hours. Three terms. *M.*, *W.*, *F.*, at 2. Prerequisite, course 4 or equivalent. Not open to freshmen.

10. MODERN PROSE AND DRAMA. Three credit hours. Three terms. *M.*, *W.*, *F.*, at 10. Dr. THOMAS. Prerequisite, course 4, or equivalent. Open to freshmen offering four entrance units in German.

10a. PROSE COMPOSITION. One credit hour. Three terms. Freshmen will elect this in connection with course 10, 18, or 19. *Tu.*, at 10.

11. FAUST. Three credit hours. First and second terms. *M.*, *W.*, *F.*, at 3. Prerequisite, course 9 or 10. Must be elected for both terms. Professor RHOADES.

12. PROSE COMPOSITION AND CONVERSATION. Two credit hours. Three terms. *Tu.*, *Th.*, at 2 or 3. Prerequisite, course 4. Open only by permission and in connection with one of the advanced reading courses. The course is conducted in German. Assistant Professor EISENLOHR.

13. ADVANCED PROSE COMPOSITION. One credit hour. Three terms. *M.*, at 2. Prerequisite, course 12. The course is intended for students who are preparing to teach and is conducted in German. Associate Professor VILES.

14. GOTHIC. Three credit hours. First term. Time to be arranged. The work is introductory to the historical study of either English or German. Associate Professor VILES.

15. OLD HIGH GERMAN. Two credit hours. Second and third terms. Time to be arranged. This, with course 17, forms a natural sequence to 14. Associate Professor VILES.

16. MIDDLE HIGH GERMAN. Two credit hours. Three terms. Time to be arranged. Associate Professor VILES.

17. OLD SAXON AND OLD NORSE. One credit hour. Second and third terms. Time to be arranged. The work follows course 14 and should be taken in connection with 15. Associate Professor VILES.

18. ROMANTIC WRITERS AND HEINE. Three credit hours. Three terms. *M.*, *W.*, *F.*, at 3. Prerequisite, course 4, or equivalent. Open to freshmen offering four entrance units in German.

\*19. RECENT AND CONTEMPORARY WRITERS. Three credit hours. Three terms. *M., W., F., at 2.* Professor RHOADES. Prerequisite, course 4, or equivalent.

26. SEMINARY. Studies in Modern Literature. Two credit hours. Three terms. *Tu., at 4.* The work is continuous throughout the year and must be so elected in order to count for an advanced degree. Professor RHOADES.

28. GERMAN LYRIC POETRY. Two credit hours. Three terms. *W., F., at 2.* Prerequisite, course 4. Assistant Professor EISENLOHR.

The course is continuous, but may be elected for a single term.

30. HISTORY OF GERMAN LITERATURE SINCE THE REFORMATION. Three credit hours. Third term. *M., W., F., at 3.* Professor RHOADES.

Graduates will present a special study of a single author or movement.

31. THE TEACHING OF GERMAN. Two credit hours. First term. Prerequisite, 20 credit hours in advance of course 1, including course 12. Time to be arranged.

Phonetics and History of the German Language.

32. THE TEACHING OF GERMAN. Two credit hours. Second term. Prerequisite, course 31. Time to be arranged.

Theories and Methods.

33. THE TEACHING OF GERMAN. Two credit hours. Third term. Prerequisite, course 32. Time to be arranged.

Inflections and Syntax.

## GREEK LANGUAGE AND LITERATURE

(Office, Room 307, University Hall.)

PROFESSOR SMITH, ASSOCIATE PROFESSOR HODGMAN, ASSOCIATE  
PROFESSOR ELDEN.

1. ELEMENTARY GREEK. Four credit hours. Three terms. *M., Tu., Th., F., at 11.* Associate Professor ELDEN.

7. XENOPHON: The Memorabilia of Socrates; Exercises in Greek Prose. Four credit hours. First term. *M., Tu., Th., F., at 11.* Prerequisite, course 1. Professor SMITH.

8. HERODOTUS: Selections; with Studies in Greek History. Four credit hours. Second term. *M., Tu., Th., F., at 11.* Prerequisite, course 7. Professor SMITH.

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\*Not given in 1908-1909.

9. HOMER'S ODYSSEY. Selections from Books I-IX. Four credit hours. Third term. *M., Tu., Th., F., at 11.* Prerequisite, courses 7 and 8. Professor SMITH.

10. LYSIAS: Eight Orations; with Studies in Attic Procedure. Three credit hours. First term. *Tu., Th., F., at 10.* Prerequisite, courses 7 to 9. Professor SMITH.

11. PLATO: Apology, Crito and Phædo. Three credit hours. Second term. *Tu., Th., F., at 10.* Prerequisite, courses 7 to 10. Professor SMITH.

12. HOMER'S ILIAD. Three credit hours. Third term. *Tu., Th., F., at 10.* Prerequisite, courses 7 to 11. Professor SMITH.

13. THUCYDIDES: Book I or Book VII. Two credit hours. First term. *M., F., at 3.* Prerequisite, courses 7 to 12. Associate Professor HODGMAN.

14. DEMOSTHENES: Olynthiacs and Philippics. Two credit hours. Second term. *M., F., at 3.* Prerequisite, courses 7 to 12. Associate Professor HODGMAN.

15. GREEK LYRIC POETS, OR THEOCRITUS. Two credit hours. Third term. *M., F., at 3.* Prerequisite, courses 7 to 12. Associate Professor HODGMAN.

16. EURIPIDES: Alcestis, with lectures on the Attic drama. Two credit hours. First term. Time to be arranged. Prerequisite, courses 7 to 12. Associate Professor HODGMAN.

17. SOPHOCLES: Oedipus Tyrannus. Two credit hours. Second term. Time to be arranged. Prerequisite, courses 7 to 12. Associate Professor HODGMAN.

18. AESCHYLUS: Agamemnon. Two credit hours. Third term. Time to be arranged. Prerequisite, courses 7 to 12. Associate Professor HODGMAN.

19. EPIC POETRY. Two credit hours. First term. *W., F., at 2.* Prerequisite, courses 7 to 12. Professor SMITH.

20. ARISTOPHANES: The Birds. Two credit hours. Second term. *W., F., at 2.* Prerequisite, courses 7 to 12. Professor SMITH.

21. POST-CLASSICAL GREEK. Two credit hours. Third term. *W., F., at 2.* Prerequisite, courses 7 to 12. Professor SMITH.

22. ANCIENT ART. Lectures on Architecture. Two credit hours. First term. No prerequisite course. Professor SMITH.

23. ANCIENT ART. Lectures on Sculpture. Two credit hours. Second term. No prerequisite course. Professor SMITH.

24. ANCIENT ART. Lectures on Sculpture. Two credit hours. Third term. No prerequisite course. Professor SMITH.

Courses 22, 23, and 24, are biennial, alternating with courses 32, 33, and 34. They will not be offered again until 1909-1910.

25. GREEK PHILOSOPHY. Two credit hours. First term. *Tu., Th., at 2.* Prerequisite, courses 7 to 12. Professor SMITH.

26. PLATO. Gorgias or Protagoras. Two credit hours. Second term. *Tu., Th., at 2.* Prerequisite, courses 7 to 12. Professor SMITH.

27. STUDIES IN NEW TESTAMENT GREEK. Two credit hours. Third term. *Tu., Th., at 2.* Prerequisite, courses 7 to 12. Professor SMITH.

28. HISTORICAL GRAMMAR. One credit hour. Three terms. Prerequisite, courses 7 to 12. Associate Professor HODGMAN.

29. RELATIONS OF GREECE AND PERSIA: The Panegyricus of Isocrates. Two credit hours. First term. Prerequisite, courses 7 to 12. Professor SMITH.

30. THE MACEDONIAN SUPREMACY. Arrian's Expedition of Alexander the Great. Two credit hours. Second term. Prerequisite, courses 7 to 12. Professor SMITH.

31. LATER GREEK EPICS: The Argonautica of Apollonius Rhodius. Two credit hours. Third term. Prerequisite, courses 7 to 12. Professor SMITH.

32. MEDIAEVAL ART. Lectures on Architecture. Two credit hours. First term. No prerequisite course. Professor SMITH.

33. MEDIAEVAL ART. Lectures on Sculpture. Two credit hours. Second term. No prerequisite course. Professor SMITH.

34. MEDIAEVAL ART. Lectures on Painting. Two credit hours. Third term. No prerequisite course. Professor SMITH.

These courses, 32, 33, and 34, are biennial, alternating with courses 22, 23, and 24. They will not be offered again until 1910-1911.

35. PRIVATE LIFE OF THE GREEKS. Lectures. Two credit hours. First term. No prerequisite course. Professor SMITH.

36. HISTORY OF GREEK LITERATURE. (Epic and Lyric Poetry.) Two credit hours. First term. Professor SMITH.

37. HISTORY OF GREEK LITERATURE. (The Attic Drama.) Two credit hours. Second term. Professor SMITH.

38. HISTORY OF GREEK LITERATURE. (Historians, Philosophers, and Orators.) Two credit hours. Third term. Professor SMITH.

Courses 36, 37, and 38 are open to students without a knowledge of Greek.

## LATIN LANGUAGE AND LITERATURE

(Office, Room 307, University Hall.)

PROFESSOR DERBY, ASSOCIATE PROFESSOR HODGMAN, ASSOCIATE  
PROFESSOR ELDEN.

N. B.—Except in case of unavoidable conflict, members of Latin 1, 2, 3, whose names begin with any letter from A to F inclusive, will be placed in Section I; those whose names begin with any letter from G to N inclusive, in Section II; all others in Section III.

1. CICERO. *De Senectute* and *De Amicitia*, or Selected Letters. Four credit hours. First term. Prerequisite, four units of preparatory Latin. Sec. I, *M.*, *Tu.*, *Th.*, *F.*, at 10. Associate Professor ELDEN. Sec. II, *M.*, *Tu.*, *Th.*, *F.*, at 11. Associate Professor HODGMAN. Sec. III, *Tu.*, *W.*, *Th.*, *F.*, at 2. Professor DERBY.

2. LIVY: Books 1, 2, 21, or 22, or the JUGURTHA OF SALLUST. Four credit hours. Second term. Prerequisite, course 1. Sec. I, *M.*, *Tu.*, *Th.*, *F.*, at 10. Associate Professor ELDEN. Sec. II, *M.*, *Tu.*, *Th.*, *F.*, at 11. Associate Professor HODGMAN. Sec. III, *Tu.*, *W.*, *Th.*, *F.*, at 2. Professor DERBY.

3. HORACE: Odes. Four credit hours. Third term. Prerequisite, courses 1 and 2. Sec. I, *M.*, *Tu.*, *Th.*, *F.*, at 10. Associate Professor ELDEN. Sec. II, *M.*, *Tu.*, *Th.*, *F.*, at 11. Associate Professor HODGMAN. Sec. III, *Tu.*, *W.*, *Th.*, *F.*, at 2. Professor DERBY.

4. PLINY OR CICERO: Selected Letters. Three credit hours. First term. Sec. I, *M.*, *W.*, *F.*, at 3. Professor DERBY. Sec. II, *M.*, *W.*, *F.*, at 9. Associate Professor HODGMAN.

5. TACITUS: *Germania* and *Agricola*, or Histories; or *Catullus*. Three credit hours. Second term. Sec. I, *M.*, *W.*, *F.*, at 3. Professor DERBY. Sec. II, *M.*, *W.*, *F.*, at 9. Associate Professor HODGMAN.

6. TERENCE: *Phormio*; *Plautus, Trinummus* or *Captivi*. Three credit hours. Third term. Sec. I, *M.*, *W.*, *F.*, at 3. Professor DERBY. Sec. II, *M.*, *W.*, *F.*, at 9. Associate Professor HODGMAN.

\*7. MARTIAL: Selected Epigrams. Two credit hours. First term. *M.*, *F.*, at 3. Professor DERBY.

\*8. SUETONIUS. Two credit hours. Second term. *M.*, *F.*, at 3. Professor DERBY.

\*9. TACITUS: *Historiæ* or *Annales*. Two credit hours. Third term. *M.*, *F.*, at 3. Professor DERBY.

10. THE ROMAN NOVEL: *Petronius*; *Apuleius*. Two credit hours. First term. *Tu.*, *Th.*, at 9. Prerequisite, courses 1 to 3, and 4 to 6. Associate Professor HODGMAN.

11. SENECA: *Medea*; *Dialogues*. Two credit hours. Second term. *Tu., Th., at 9*. Prerequisite, courses 1 to 3, and 4 to 6. Associate Professor HODGMAN.

12. CICERO: *Tusculan Disputations*. Two credit hours. Third term. *Tu., Th., at 9*. Prerequisite, courses 1 to 3, and 4 to 6. Associate Professor HODGMAN.

13. CICERO: *De Natura Deorum*. Two credit hours. First term. *W., F., at 8*. Prerequisite, courses 1 to 3, and 4 to 6. Associate Professor ELDEN.

14. EPIC POETRY. Two credit hours. Second term. *W., F., at 8*. Prerequisite, courses 1 to 3, and 4 to 6. Associate Professor ELDEN.

15. HORACE: *Satires*. Two credit hours. Third term. *W., F., at 8*. Prerequisite, courses 1 to 3, and 4 to 6. Associate Professor ELDEN.

16. HORACE: *Epistles*. Two credit hours. First term. *Tu., Th., at 3*. Professor DERBY.

17. TACITUS: *Annals*. Two credit hours. Second term. *Tu., Th., at 3*. Professor DERBY.

17a. LATE LATIN. Two credit hours. Third term. *Tu., Th., at 3*. Professor DERBY.

18. TEACHERS' COURSE. Three credit hours. Three terms. *M., W., F., at 9*. Prerequisite, courses 1 to 6. Associate Professor ELDEN.

19. LATIN PROSE COMPOSITION FOR TEACHERS. Three credit hours. Three terms. *M., Tu., F., at 10*. Associate Professor HODGMAN.

Courses 18 and 19 are essential for those students who are preparing to teach Latin. Such students are strongly advised to take also at least one advanced reading course.

20. ROMAN PRIVATE LIFE. One credit hour. Three terms. *Tu., at 8*. Prerequisite, courses 1 to 3, and 4 to 6. Professor DERBY.

\*21. QUIZ AND REVIEW. One credit hour. Three terms. *M., at 2*. Prerequisite, courses 1 to 3, and 4 to 6. Professor DERBY.

This course will include brief outlines of Latin Literature, Ancient Geography, the field of Classical Philology, and a review of some less familiar parts of Latin Grammar.

22. ROMAN LITERATURE IN ENGLISH. One credit hour. Three terms. Time to be arranged. Associate Professor ELDEN.

Translation: Lectures on Roman Literature and its influence on modern writers. Reports on assigned readings of the master-

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\*Not given in 1908-1909.

pieces in translation. Open to students of Latin, but especially intended for those without a knowledge of Latin who desire to become acquainted with the broader outlines of Roman literature.

COURSES PRIMARILY FOR GRADUATES

\*30a. ROMAN PUBLIC LIFE. One credit hour. Three terms. *Th., at 8.* Professor DERBY.

A study, partly from the sources, of the growth of the Roman constitution, and of the methods of Roman administration.

\*30. LATIN LITERATURE. One credit hour. Three terms.

\*31. LATIN PHILOLOGY. One credit hour. Three terms.

32. HISTORICAL LATIN GRAMMAR. Sounds and Inflections. One credit hour. Three terms. Associate Professor HODGMAN.

This course treats of pronunciation, ablaut, vowel and consonant changes—especially vowel weakening—accent, inflection, and other similar topics essential to the understanding of the principles which govern the development of the Latin language.

33. HISTORICAL LATIN GRAMMAR. Syntax. One credit hour. Three terms. *Th., at 3.* Associate Professor ELDEN.

Lectures on the problems connected with the origin and development of certain constructions in Latin syntax, a treatment along historical lines of the syntactic uses of the cases, moods, and tenses.

Courses 32 and 33 are deemed essential for those who make Latin a major or minor subject of study. Students with consent of instructor, may earn an additional credit hour in each.

\*34. ADVANCED LATIN COMPOSITION.

\*35. PRO-SEMINARY. Textual Criticism; interpretation and criticism of Latin authors.

36. ROMAN RELIGION. One credit hour. Three terms. Lectures, and Fasti of Ovid. Associate Professor HODGMAN.

\*37. LEGAL LATIN.

A study of early Roman law, as given in Bruns' *Fontes*, and similar treatises; or of the *Institutes* of Justinian.

\*38. MEDIAEVAL LATIN.

39. THE ELEMENTS OF EPIGRAPHY. Two credit hours. Three terms. Professor DERBY.

40. PALAEOGRAPHY. One credit hour. Three terms.

Special topics related to the subjects named above may be pursued under supervision of the instructor and receive credit. Such lines of reading and individual investigation will usually be supplementary to the regular graduate courses.

The days and hours of class room exercises in the graduate courses will be arranged to suit the mutual convenience of the instructor and the students.

42. ROMAN SATIRE. Open to graduates and advanced undergraduates. Two credit hours. Three terms. Associate Professor ELDEN.

Lectures and recitations: The history and development of Roman Satire; its influence on modern literatures, especially those of France and England. The authors studied will be Horace, Juvenal, and Persius, together with the fragments of the earlier satirists.

## MATHEMATICS

(Office, Room 314, University Hall.)

PROFESSOR BOHANNAN, ASSOCIATE PROFESSOR M'COARD, ASSOCIATE PROFESSOR SWARTZEL, ASSOCIATE PROFESSOR KUHN, ASSISTANT PROFESSOR ARNOLD, ASSISTANT PROFESSOR RASOR, ASSISTANT PROFESSOR PRESTON, MISS BAREIS,  
MR. CHAMBERS.

21. COLLEGE ALGEBRA. Three credit hours. First term. *M.*, *W.*, *F.*, at 9, 11 or 1. Professor BOHANNAN, Associate Professor McCOARD, Associate Professor KUHN.

22. PLANE TRIGONOMETRY. Three credit hours. Second term. *M.*, *W.*, *F.*, at 9, 11 or 1. Professor BOHANNAN, Associate Professor McCOARD, Associate Professor KUHN.

23. ELEMENTARY ANALYTICAL GEOMETRY AND CALCULUS. Three credit hours. Third term. *M.*, *W.*, *F.*, at 9, 11 or 1. Prerequisite, course 22. Professor BOHANNAN, Associate Professor McCOARD, Associate Professor KUHN.

24. PROBLEMS ON ALL PAST WORK. One credit hour. Three terms. *F.*, at 10. Assistant Professor ARNOLD.

28. ANALYTICAL GEOMETRY AND CALCULUS. Three credit hours. Three terms. Prerequisite, courses 21, 22, 23, or 31, 32, 33. Assistant Professor RASOR.

31. COLLEGE ALGEBRA. Five credit hours. First term. *M.*, *Tu.*, *W.*, *Th.*, *F.*, at 8, 9, 11, 1 or 2. Professor BOHANNAN, Associate Professors McCOARD, SWARTZEL, KUHN, Assistant Professors ARNOLD, RASOR, PRESTON, Miss BAREIS, Mr. CHAMBERS.

32. PLANE TRIGONOMETRY. Five credit hours. Second term. *M.*, *Tu.*, *W.*, *Th.*, *F.*, at 8, 9, 11, 1 or 2. Professor BOHANNAN, Associate Professors McCOARD, SWARTZEL, KUHN, Assistant Professors ARNOLD, RASOR, PRESTON, Miss BAREIS, Mr. CHAMBERS.

33. ANALYTICAL GEOMETRY. Five credit hours. Third term. *M., Tu., W., Th., F., at 8, 9, 11, 1 or 2.* Prerequisite, course 22 or 32. Professor BOHANNAN, Associate Professors McCOARD, SWARTZEL, KUHN, Assistant Professors ARNOLD, RASOR, PRESTON, Miss BAREIS, Mr. CHAMBERS.

41, 42, 43. CALCULUS. Five credit hours. Three terms. *M., Tu., W., Th., F., at 8, 11 or 1.* Prerequisite, courses 21, 22, 23, or 31, 32, 33. Professor BOHANNAN, Associate Professors McCOARD and SWARTZEL, KUHN, Assistant Professors ARNOLD, RASOR, PRESTON, Miss BAREIS.

25. HIGHER MATHEMATICS. From one to ten hours a week may be selected from the following courses: (a) Determinants. (b) Modern Geometry. (c) Modern Higher Algebra. (d) Advanced Analytical Geometry. (e) Advanced Calculus. (f) Space Analytics. (g) Differential Equations. (h) Theory of Equations. (i) Higher Plane Curves. (j) Groups. (k) General Function Theory. (l) Elliptic Functions. (m) Potential Function. (n) Spherical Harmonies. (o) Mathematical Physics. (r) Higher Geodesy. (s) Infinite Series and Products. (t) The Teaching of Elementary Mathematics. Professor BOHANNAN, Associate Professors SWARTZEL and KUHN, Assistant Professors ARNOLD and RASOR, and Miss BAREIS.

### MILITARY SCIENCE AND TACTICS

(Gymnasium and Armory.)

CAPTAIN G. L. CONVERSE, U. S. A., RET.

The Military Department is open five days during each week of each term. Required of all students first and second year, unless excused by the Military and Gymnasium Board.

1. MILITARY DRILL. One credit hour. First and third terms. *M., Tu., W., at 11 or 4.*

2. MILITARY DRILL. One credit hour. Second term; Drill Regulations, *M., Tu., W., at 11 or 4*; Gallery Practise, *M., Tu., W., Th., 1 to 5.*

### PHILOSOPHY

(Office, Room 321, University Hall.)

PROFESSOR SCOTT, ASSISTANT PROFESSORS HAINES AND DAVIES.

101. INTRODUCTORY LOGIC. Three credit hours. Sec. I. Third term. *M., W., F., at 9.* Professor SCOTT. Sec. II. First term. *M., W., F., at 9.* Text, Creighton's "Introductory Logic." Assistant Professor HAINES.

This course and Psychology form a continuous course for a year. Practical work in the analysis and criticism of reasoning processes. Recitations and lectures.

103. ETHICS. Two credit hours. Three terms. *M., W., F., at 11.* Professor SCOTT.

106. INTRODUCTION TO PHILOSOPHY. Three credit hours. Three terms. *M., W., F., at 2.* Prerequisite, Psychology 1, and Philosophy 101 or 103; or Psychology 1 and Philosophy 152. Professor SCOTT.

107. THEORY OF KNOWLEDGE. Three credit hours. First and second terms. *M., W., F., at 3.* Prerequisite, Philosophy 106. Professor SCOTT.

108. METAPHYSICS. Three credit hours. Third term. *M., W., F., at 3.* Prerequisite, Philosophy 106 and 107. Professor SCOTT.

112. ADVANCED ETHICS. Two credit hours. Three terms. *Tu., Th., at 3.* Prerequisite, one year of elementary work, including Philosophy 103. Professor SCOTT.

115. AESTHETICS. Two credit hours. Three terms. *Tu., Th., at 2.* Open to first year students. Assistant Professor DAVIES.

118. PHILOSOPHY OF SCIENCE. Two credit hours. Three terms. *Tu., Th., at 2.* Prerequisite, one year of elementary work, including Philosophy 101. Professor SCOTT.

119. PHILOSOPHY OF RELIGION. Two credit hours. Three terms. *Tu., Th., at 2.* Prerequisite, at least one year of elementary work. Professor SCOTT.

123. PHILOSOPHY OF MIND. Two credit hours. Three terms. *Tu., Th., at 11.* Prerequisite, Philosophy 151, and Psychology 1, or Philosophy 106 and Psychology 1. Assistant Professor DAVIES.

141. ETHICAL SEMINARY. Two credit hours. Three terms. Prerequisite, one year of elementary work and Philosophy 112. Professor SCOTT.

142. PHILOSOPHICAL SEMINARY. Two credit hours. Three terms. Prerequisite, one year of elementary work and Philosophy 106, 107, and 108. Assistant Professor DAVIES.

151. HISTORY OF ANCIENT PHILOSOPHY. Three credit hours. First term. *M., W., F., at 8.* Open to first year students. Assistant Professor DAVIES.

152. HISTORY OF MODERN PHILOSOPHY. Three credit hours. Second and third terms. *M., W., F., at 8.* Open to first year students. Assistant Professor DAVIES.

155. HISTORY OF CHRISTIAN PHILOSOPHY. Three credit hours. Three terms. *M., Th., F., at 10.* Open to first year students. Assistant Professor DAVIES.

\*157. PLATO. Two credit hours. Three terms. *Tu., Th., at 3.* Prerequisite, one year of elementary work, including Philosophy 151. Assistant Professor DAVIES.

159. ARISTOTLE. Two credit hours. Three terms. *Tu., Th., at 3.* Prerequisite, one year of elementary work, including Philosophy 151. Assistant Professor DAVIES.

161. DESCARTES TO KANT. Three credit hours. Three terms. *M., W., F., at 11.* Prerequisite, one year of elementary work, including Philosophy 152. Assistant Professor DAVIES.

166. KANT TO HEGEL. Three credit hours. Three terms. *M., W., F., at 11.* Prerequisite, one year of elementary work, including Philosophy 152. Assistant Professor DAVIES.

168. RECENT AND CURRENT PHILOSOPHY. Three credit hours. Three terms. *M., Th., F., at 10.* Prerequisite, one year of elementary work, including Philosophy 152. Professor SCOTT.

### PHYSICAL EDUCATION FOR MEN

(The Gymnasium.)

DR. WINGERT, MR. WARFIELD, MR. KIBLER.

1. PHYSICAL EDUCATION, consisting of a graded systematic course of healthful body-building exercise and recreation, is required two hours per week during the first year of each student's residence at the University, or until he has successfully completed three terms of this work.

All first year men are required to take a physical examination at opening of the fall term.

### PHYSICAL EDUCATION FOR WOMEN

(Gymnasium and Armory.)

MISS HOPKINS

1. GYMNASIUM. Three terms. Required of all young women during the first year of their course. *M., Tu., Th., F., 9 or 11.*

2. GYMNASIUM. Three terms. Required of all young women during the second year of their course. *M., Tu., Th., F., 8 or 10.*

### PHYSICS

(Office, Room 24, Physics Hall.)

PROFESSOR THOMAS, ASSOCIATE PROFESSOR KESTER, ASSISTANT PROFESSOR EARHART, ASSISTANT PROFESSOR BLAKE, MR. BAILEY, MR. SHEARD, MR. KELLOGG, MR. BARNES, MR. COGGINS.

2. GENERAL PHYSICS. Three credit hours. Three terms. *M., W., at 9, or Tu., Th., at 11.* One two-hour period, experimental

\*Not given in 1908-1909.

work; one quiz. Prerequisite, Mathematics 21, 22, 23, or 31, 32, 33. Professor THOMAS.

3. PROBLEMS. Two credit hours. Three terms. *Tu., Th., at 9.* Prerequisite, Mathematics 21, 22, 23, or 31, 32, 33. Associate Professor KESTER, Mr. BAILEY, Mr. SHEARD.

4. ELECTRICITY AND MAGNETISM. Three credit hours. First term. *M., Tu., Th., at 10.* Professor THOMAS.

11. GENERAL PHYSICS. Three credit hours. Three terms. Lecture, *W., at 11 or 2.* Laboratory, *Tu., Th., 8 to 10, or Th., F., 2 to 4.* Assistant Professor BLAKE.

12. LABORATORY. Three to five credit hours. Three terms. *M., Tu., W., 1 to 4.* Prerequisite, course 2 (or may accompany course 2). Assistant Professor BLAKE.

17. THE TEACHING OF PHYSICS. Three credit hours. Third term. Prerequisite, two terms of college work in physics. Time to be arranged.

18. THE PRODUCTION AND USE OF ELECTRIC CURRENTS. Theory and practise. Three credit hours. Third term. Time to be arranged. Prerequisite, course 11, or course 2, and 6 hours in course 12. Professor THOMAS.

A non-technical course in dynamo currents, for teachers and for general science students.

FOR ADVANCED UNDERGRADUATES AND GRADUATES.

13. ADVANCED LABORATORY. Three to five credit hours. Three terms. Prerequisite, course 2 or 11, and course 12. Professor THOMAS, Associate Professor KESTER, Assistant Professor EARHART, Assistant Professor BLAKE.

16. PHYSICAL SEMINARY. One credit hour. Three terms. Prerequisite, a year of college work in physics.

19. MOLECULAR PHYSICS. Four credit hours. Third term. *M., Tu., W., Th., at 8.* Prerequisite, Mathematics 28, or equivalent, and 15 credit hours in Physics. Assistant Professor EARHART.

20. THE PRODUCTION OF ELECTRICITY THROUGH GASES. Courses 19 and 20 given in alternate years; course 20 in 1908-1909. Assistant Professor EARHART.

21. THEORETICAL PHYSICS. An advanced course in light. Two credit hours. Three terms. Prerequisites, Physics 2, and Mathematics 41, 42, 43, or equivalents. Mr. BAILEY.

22. THEORY OF OSCILLATIONS WITH THEIR APPLICATIONS TO WIRELESS TELEGRAPHY. Three credit hours. Three terms. Prerequisites, Physics 2, and Mathematics 41, 42, 43, or equivalents. Assistant Professor BLAKE.

23. POTENTIAL FUNCTION, WITH SPECIAL REFERENCE TO ELECTRICITY AND MAGNETISM. Three credit hours. Three terms. Prerequisites, Physics 2, and Mathematics 41, 42, 43, or equivalents. Assistant Professor BLAKE.

24. CONDUCTION OF ELECTRICITY THROUGH METALS FROM THE STANDPOINT OF THE ELECTRONIC THEORY. Three credit hours. Three terms. Prerequisites, Physics 2, and Mathematics 41, 42, 43, or equivalents. Assistant Professor BLAKE.

25. THEORETICAL MECHANICS. Three credit hours. Three terms. Prerequisites, Physics 2, and Mathematics 41, 42, 43, or equivalents. Associate Professor KESTER.

26. THERMODYNAMICS AND ELECTROLYTIC CONDUCTION. Three credit hours. Three terms. Prerequisites, Physics 2, and Mathematics 41, 42, 43, or equivalents. Associate Professor KESTER.

Electrolytic Conduction in the third term follows the deduction of the laws of dissociation in the second term.

27. GENERAL ELECTRICITY AND MAGNETISM. Three credit hours. Three terms. Prerequisites, Physics 2, and Mathematics 41, 42, 43, or equivalents. Associate Professor KESTER.

28. THE THEORY AND PRACTICE OF ELECTRICAL MEASUREMENTS. Three to five credit hours. Three terms. Prerequisites, Physics 2, or equivalent, a course in electrical measurement, and Mathematics 41, 42, 43, or equivalents. Professor THOMAS.

Lectures, assigned readings and reports, and laboratory practice.

FOR GRADUATES.

15. RESEARCH LABORATORY. Three to five credit hours. Three terms. Prerequisite, two years of laboratory work in physics. Professor THOMAS, Associate Professor KESTER, Assistant Professor EARHART, Assistant Professor BLAKE.

**POLITICAL ECONOMY**

(See Economics and Sociology.)

**POLITICAL SCIENCE**

(See American History and Political Science.)

**PSYCHOLOGY**

(Office, Room 407, University Hall.)

PROFESSOR MAJOR, ASSOCIATE PROFESSOR HAINES.

1. GENERAL PSYCHOLOGY. Introductory Course. Three credit hours. First and second terms. *M., W., F., at 11.* Professor MAJOR, Associate Professor HAINES,

This course, or the equivalent, is required for admission to all other courses in the department of Psychology. Lectures, demonstrations and recitations. (For third term's work, see Philosophy 101.)

2. EDUCATIONAL PSYCHOLOGY. Two credit hours. Three terms. *Tu., Th., at 11.* Prerequisite, Psychology 1, or equivalent. Professor MAJOR.

3. EXPERIMENTAL PSYCHOLOGY. Three credit hours. Three terms. Lecture, *F., at 1*; laboratory, *Th., 1 to 4, and F., 2 to 4*, or may be arranged. Prerequisite, Psychology 1. Associate Professor HAINES.

Training in psychological analysis and the methods of the psychological laboratory.

4. MENTAL DEVELOPMENT. Two credit hours. Three terms. *M., F., at 10.* Professor MAJOR.

This course is designed (1) to describe the characteristic features of the child mind, (2) to study the principles and empirical data of the development of the individual human mind.

7. ABNORMAL PSYCHOLOGY. Three credit hours. Second and third terms. *M., W., F., at 9.* Prerequisite, Psychology 1. Associate Professor HAINES.

Psychological studies of nervous and mental diseases by lecture, text and clinic methods.

8. ANIMAL PSYCHOLOGY. Three credit hours. Third term. *M., W., F., at 11.* Prerequisite, Psychology 1. Associate Professor HAINES.

A systematic tracing of the evolution of mind.

10. SOCIAL PSYCHOLOGY. Three credit hours. First term. *M., Tu., F., at 10.* Prerequisite, Psychology 1. Associate Professor HAINES.

The social factor in the development of personality, and the mental processes involved in social development, including such topics as suggestion, imitation, invention, sympathy, modesty, the socially unfit, and the genius.

11. FOLK PSYCHOLOGY. Three credit hours. Second term. *M., Tu., F., at 10.* Associate Professor HAINES.

The psychic factors involved in group activities, such as the play of children, art (especially of savages and barbarians), mob phenomena, family life, and ethnic groups.

12. THE PSYCHOLOGY OF REASONING. Three credit hours. Third term. *M., Tu., F., at 10.* Associate Professor HAINES.

An inductive study of the method of thinking as shown by the history of science, and the method of mental accommodation and invention as shown in primitive man and animals.

14. ADVANCED PSYCHOLOGY. Two credit hours. Three terms. Time to be arranged. Prerequisite, Psychology 1. Assistant Professor DAVIES.

This course includes a discussion of the methods of psychology, and a detailed consideration of the main psychological concepts—feeling, conation, perception, imagination, etc., both in themselves and in their relation to one another.

\*16. INDIVIDUAL PSYCHOLOGY. Two credit hours. Three terms. Professor MAJOR.

A study of individual variations in mental capacity and development.

20. GENERAL PSYCHOLOGY. Advanced Course. Three credit hours. Three terms. *M., W., F., at 9.* Professor MAJOR.

This course is open to students who have completed Psychology 1, or the equivalent, and who wish to make a more intensive study, than is practical in an introductory course, of certain topics selected from the field of general psychology.

31. RESEARCH IN EXPERIMENTAL PSYCHOLOGY. Two credit hours or more. Three terms. Associate Professor HAINES.

Individual investigation of problems. The laboratory is open to all properly qualified researchers, and assistance will be given to the work such may seek to prosecute.

32. SEMINARY IN PSYCHOLOGY. Two to five credit hours. Three terms. Hours to be arranged. Professor MAJOR, Associate Professor HAINES.

This course is open only to advanced students in Philosophy, Psychology, or Education.

33. GRADUATE COURSES IN PSYCHOLOGY. Three to ten credit hours. Three terms. Professor MAJOR, Associate Professor HAINES.

These courses are to meet the needs of individual graduate students who are pursuing a major or minor study in the department of Psychology.

#### RHETORIC AND ENGLISH LANGUAGE (See English.)

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\*Not given in 1908-1909.

## ROMANCE LANGUAGES AND LITERATURES

(Office, Room 305, University Hall.)

PROFESSOR BOWEN, ASSOCIATE PROFESSOR BRUCE, ASSISTANT PROFESSOR INGRAHAM, ASSISTANT PROFESSOR PEIRCE, MR. EWINGTON.

## I. FRENCH.

1. ELEMENTARY FRENCH. Four credit hours. Three terms. Grammar: Fraser and Squair's, or equivalent. Reader: Aldrich and Foster's, or Bowen's First Scientific. Historical and narrative prose; one or more prose comedies. Sec. I, *M.*, *Tu.*, *Th.*, *F.*, at 9 (Arts only). Sec. II, III, and IV, *M.*, *Tu.*, *Th.*, *F.*, at 10. Sec. V, *M.*, *Tu.*, *Th.*, *F.*, at 11 (Ag. and Engin. only). Sec. VI, and VII, *Tu.*, *W.*, *Th.*, *F.*, at 2. All instructors in the department teach one or more sections of this course.

Stress laid upon the acquisition of a correct pronunciation, after which the energy of the student is directed toward the attainment of a full and accurate reading knowledge of the language. Grammar and composition made to contribute to this end. Sight reading emphasized.

2. MODERN FRENCH LITERATURE. Four credit hours. Three terms. Sec. I, and II, *M.*, *Tu.*, *Th.*, *F.*, at 10. Sec. III, *M.*, *Tu.*, *Th.*, *F.*, at 11. Prerequisite, course 1, or equivalent. Associate Professor BRUCE, Assistant Professor PEIRCE, Mr. EWINGTON.

The study of the literature as such now taken up. The work of the year includes the following subjects: (1) Contes; (2) The Novel (Balzac or Hugo); (3) Lyric poetry (Bowen's Modern French Lyrics); (4) Romantic drama (Hugo). Prose composition. Systematic attention given to syntax and idiom. Lectures supplement the work. Private reading required.

3. SCIENCE READING. Four credit hours. Third term. *Tu.*, *W.*, *Th.*, *F.*, at 2. Prerequisite, course 2, first and second terms. Assistant Professor PEIRCE.

A course of rapid reading introductory to the vocabulary of scientific literature.

4. FRENCH COMEDY OF THE SEVENTEENTH CENTURY. Three credit hours. First term. Sec. I, *M.*, *W.*, *F.*, at 8. Sec. II, *M.*, *W.*, *F.*, at 11. Given biennially, alternating with course 16. Prerequisite, courses 1 and 2. Assistant Professor PEIRCE, Professor BOWEN.

Study of the growth of French Comedy, with work centering upon Molière (three plays) and Regnard.

5. FRENCH TRAGEDY. Three credit hours. Second term. Sec. I, *M.*, *W.*, *F.*, at 8. Sec. II, *M.*, *W.*, *F.*, at 11. Given biennially,

alternating with course 17. Prerequisite, courses 1 and 2. Assistant Professor PEIRCE, Professor BOWEN.

Corneille, Racine, and Voltaire. Critical study of Le Cid, Andromaque, Esther, and Zaire.

6. SEVENTEENTH CENTURY PROSE. Three credit hours. Third term. Sec. I, *M.*, *W.*, *F.*, at 8. Sec. II, *M.*, *W.*, *F.*, at 11. Given biennially, alternating with course 18. Prerequisite, courses 1 and 2. Assistant Professor PEIRCE, Professor BOWEN.

Critical study of Descartes, Pascal, La Bruyère and others. Warren's Selections.

7. ADVANCED PROSE COMPOSITION. One credit hour. Three terms. Sec. I, *Tu.*, at 8. Sec. II, *Tu.*, at 11. Prerequisite, courses 1 and 2. Assistant Professor PEIRCE, Professor BOWEN.

Cameron's French Composition, followed by other selections. Dictation. Conversation.

8. PROSE OF THE ROMANTIC PERIOD. Two credit hours. First term. *Tu.*, *Th.*, at 9. Given biennially, alternating with course 11. Prerequisite, courses 1 and 2. Associate Professor BRUCE.

9. RECENT FRENCH PROSE. Two credit hours. Second term. *Tu.*, *Th.*, at 9. Given biennially, alternating with course 12. Prerequisite, courses 1 and 2. Associate Professor BRUCE.

Rapid reading, with lectures, the work centering upon such writers as Bazin, Daudet, Loti, and Zola.

10. PRACTISE IN SPEAKING AND WRITING FRENCH: Based on Daudet's Stories. Two credit hours. Third term. *Tu.*, *Th.*, at 9. Students wishing to elect this course must have the consent of the instructor in charge. Given biennially, alternating with course 13. Associate Professor BRUCE.

\*11. FRENCH TRAVEL WRITERS. Two credit hours. First term. Given biennially, alternating with course 8. Prerequisite, courses 1 and 2.

Scenes of travel from Gautier, Hugo, and Dumas. Gautier's *Voyage en Espagne* (Clarendon Press), and others.

\*12. EIGHTEENTH CENTURY PROSE. Two credit hours. Second term. Given biennially, alternating with course 9. Prerequisite, courses 1 and 2.

Selections from Voltaire (ed. Cohn and Woodward), or others.

\*13. ADVANCED CONVERSATIONAL PRACTISE: Based on Stories of Coppée and Maupassant. Two credit hours. Third term. Students wishing to elect this course must have the consent of the instructor in charge. Given biennially, alternating with course 10.

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\*Not given in 1908-1909.

14. FRENCH SEMINARY A. Two credit hours. Three terms. *M.*, 3 to 5. Given biennially, alternating with course 15. Prerequisite, courses 1, 2, 4, 5, 6, and 7, or an equivalent. Professor BOWEN.

Studies in specific literary fields. The subject for 1908-1909 will be: The Development of the French Novel.

\*15. FRENCH SEMINARY B. Two credit hours. Three terms. Given biennially, alternating with course 14. Prerequisite, courses 1, 2, 4, 5, 6, and 7, or an equivalent.

Studies in Old French (with emphasis of *la Chanson de Roland*) and in the language and writers of the Sixteenth Century (Darmesteter et Hatzfeld, *Morceaux choisis*); special consideration of Montaigne.

\*16. FRENCH COMEDY OF THE EIGHTEENTH CENTURY. Three credit hours. First term. Given biennially, alternating with course 4. Prerequisite, courses 1 and 2.

Lectures on the growth of French Comedy, with work centering upon Marivaux and Beaumarchais. Olmsted's edition of Marivaux's Comedies, and *le Barbier de Séville*.

\*17. FRENCH SOCIETY IN THE SEVENTEENTH CENTURY. Three credit hours. Second term. Given biennially, alternating with course 5. Prerequisite, courses 1 and 2.

Crane's Selections; with lectures. Special reference to the *Précieuse* Movement.

\*18. PRECURSORS OF FRENCH ROMANTICISM. Three credit hours. Third term. Given biennially, alternating with course 6. Prerequisite, courses 1 and 2.

Rousseau, Chateaubriand (Bowen's *Atala* and *René*), and Madame de Staël. With lectures.

## II. ITALIAN

1. ELEMENTARY ITALIAN. Two credit hours. Three terms. Grammar (Edgren's or Young's) and Bowen's Italian Reader. Modern prose. Comedy (Goldoni). Time to be arranged. Students are advised to postpone the election of this course until they have completed French 1, or its equivalent. Associate Professor BRUCE.

2. ADVANCED ITALIAN. Two credit hours. Three terms. Manzoni (*I Promessi Sposi*). Dante (*Vita Nuova, Inferno*). With lectures. *M., W.*, at 3. Prerequisite, course 1. Associate Professor BRUCE.

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\*Not given in 1908-9.

## III. SPANISH

1. ELEMENTARY SPANISH. Four credit hours. Three terms. Grammar (Hills' and Ford's or Edgren's), and Ingraham's *Victoria y Otros Cuentos*. Easy prose and plays. Composition and conversation. Sec. I, *M.*, *Tu.*, *Th.*, *F.*, at 9. Sec. II, *M.*, *Tu.*, *Th.*, *F.*, at 11. Sec. III, and IV, *Tu.*, *W.*, *Th.*, *F.*, at 2. Assistant Professor INGRAHAM, Assistant Professor PEIRCE, Mr. EWINGTON.

2. MODERN SPANISH LITERATURE. Four credit hours. Three terms. *Tu.*, *W.*, *Th.*, *F.*, at 3. Prerequisite, course 1, or equivalent. Assistant Professor INGRAHAM.

The Modern Novel and Drama. Lectures covering a survey of the literature. Composition and conversation continued.

3. CLASSICAL PROSE AND DRAMA. Two credit hours. Three terms. *Tu.*, *Th.*, at 2. Prerequisite, course 1. Professor BOWEN, or Assistant Professor INGRAHAM.

Cervantes (selections from *Don Quixote*), Calderon, and others. Lectures.

## GRADUATE COURSES IN ROMANCE LANGUAGES

31. INTRODUCTION TO ROMANCE PHILOLOGY. Two credit hours. Three terms. Time to be arranged. Professor BOWEN.

Origin and distribution of the Romance Languages and dialects. Comparative phonology and morphology of French, Italian, and Spanish. Peculiarities of syntax. Lectures and reading of illustrative texts.

32. OLD PROVENÇAL. One credit hour. Three terms. Time to be arranged. Professor BOWEN.

Study of the language and literature of the Troubadours. Appel's *Provenzalische Chrestomathie* (2nd edition).

33. HISTORY OF THE LITERARY MOVEMENT IN FRANCE IN THE FIRST HALF OF THE NINETEENTH CENTURY. Two credit hours. Three terms. Time to be arranged. Associate Professor BRUCE.

## SOCIOLOGY

(See Economics and Sociology.)

## SPANISH

(See Romance Languages.)

## ZOOLOGY AND ENTOMOLOGY

(Office, Room 1, Biological Hall.)

PROFESSOR OSBORN, ASSOCIATE PROFESSOR HINE, ASSOCIATE PROFESSOR LANDACRE, MR. JACKSON, MR. MORGULIS, MR. SEVERIN.

2. COMPARATIVE ANATOMY OF VERTEBRATES. Three to five credit

hours. Three terms. Quiz, *W.*, at 1. Laboratory, *M.*, *Tu.*, *W.*, 1 to 4. Prerequisite, course 1, or equivalent. Associate Professor LANDACRE.

12. GROSS ANATOMY OF THE FROG. Three to five credit hours. First term. Time to be arranged. Prerequisite, course 1. Associate Professor LANDACRE.

13. MINUTE ANATOMY OF THE FROG. Three to five credit hours. Second term. Time to be arranged. Prerequisite, course 1. Associate Professor LANDACRE.

14. EMBRYOLOGY OF THE FROG. Three to five credit hours. Second term. Time to be arranged. Prerequisite, course 1. Associate Professor LANDACRE.

15, 16, 17. INVERTEBRATE MORPHOLOGY. Three to five credit hours. Three terms. Time to be arranged. Prerequisite, course 1. Professor OSBORN.

18. INVERTEBRATE EMBRYOLOGY. Three to five credit hours. Three terms. Laboratory. Time to be arranged. For graduates. Prerequisite, courses 1 and 2. Professor OSBORN.

19. VERTEBRATE EMBRYOLOGY: Karyokinesis, etc. Three to five credit hours. First term. Lecture, *Th.*, at 1. Laboratory, *Th.*, *F.*, 1 to 4. Prerequisite, course 1. Associate Professor LANDACRE.

20. VERTEBRATE EMBRYOLOGY: Chick and Mammal. Three to five credit hours. Second and third terms. Lecture, *Th.*, at 1; *Th.*, *F.*, 1 to 4. Prerequisite, courses 1 and 19. Associate Professor LANDACRE.

21. COMPARATIVE NEUROLOGY. Three to five credit hours. Three terms. Time to be arranged. Prerequisite, course 1, or equivalent, but is open to advanced students in psychology and pedagogy. Associate Professor LANDACRE.

22. CYTOLOGY. Three to five credit hours. Three terms. Time to be arranged. Prerequisite, course 1, and equivalent of 2, or 15, 16, 17. Professor OSBORN.

23. ENTOMOLOGY. Three to five credit hours. Three terms. Time to be arranged. Prerequisite, course 1. Professor OSBORN.

24. ORNITHOLOGY. Two credit hours. Three terms. Lecture, *M.*, at 10. Laboratory, to be arranged. Associate Professor HINE.

25. RESEARCH WORK. Five to ten credit hours. Three terms. Prerequisite, course 1, and the equivalent of 2, or 15, 16, 17, or 19, 20. Professor OSBORN.

26. SEMINARY. One credit hour. Three terms. *Th.*, at 4. Professor OSBORN, Associate Professor LANDACRE.

27. TEACHERS' COURSE. Two or three credit hours. Three terms. Professor OSBORN, Associate Professor LANDACRE.

30. INVERTEBRATE ZOOLOGY. Five credit hours. For graduates only. Time to be arranged. Professor OSBORN.

31. INVERTEBRATE AND VERTEBRATE. Three credit hours. Three terms. Lecture, *Tu., Th., at 8, or M., F., at 10.* Laboratory, *Tu., or Th., 1 to 3.* Professor OSBORN, Associate Professor LANDACRE.

33. VERTEBRATE EMBRYOLOGY. Three to five credit hours. Study of Karyokinesis, Germ layers, organogeny, etc. For graduates only. Associate Professor LANDACRE.

34. EVOLUTION. Three credit hours. Three terms. Prerequisite, one year of Zoology, or equivalent. Professor OSBORN, Associate Professor LANDACRE.

A discussion of the facts, factors and theories of the origin, development and distribution of animal life. The first term will deal mainly with adaptations and other phases of life fundamental to the theories of evolution; the second term especially with variation and heredity as factors in evolution, and also their practical applications in animal breeding; the third term mainly with distribution and relationships involving principles of phylogeny and classification.

ANNOUNCEMENTS OF OTHER DEPARTMENTS  
OF THE UNIVERSITY

The faculty of the College of Arts, Philosophy, and Science will accredit towards the degree of Bachelor of Arts a limited amount of work in the courses announced below. The student desiring to elect one or more of these courses is required to file a petition with his election card in June, showing the special purpose which he has in view, and bearing the written approval of the professor in charge of the course desired. The Executive Committee will not count towards the degree in Arts any course named below that is not allied to the work of the student in the College of Arts, Philosophy, and Science. But a student with no conditions outstanding who has at least forty-five terms hours to his credit may, without petition, elect any course in the University on which he is prepared to enter, as extra work, not counting towards the degree of Bachelor of Arts.

## ARCHITECTURE

(Office, Brown Hall.)

PROFESSOR BRADFORD, ASSISTANT PROFESSOR CHUBB, MR. HASKETT.

27. PHOTOGRAPHY. Two credit hours. First term. *M., Tu., 1 to 3.* Prerequisite, Elementary Chemistry.

## ART

(Office, Hayes Hall.)

PROFESSOR BRACKEN, ASSISTANT PROFESSOR LAVER.

1. THEORY AND PRACTISE OF TEACHING ART. Two credit hours. First term. Time to be arranged. Professor BRACKEN.

2. Continuation of 1. Two credit hours. Second term. Time to be arranged. Professor BRACKEN.

3. Continuation of 2. Two credit hours. Third term. Time to be arranged. Professor BRACKEN.

10. DESIGN AND COMPOSITION. Two credit hours. First term. Time to be arranged. Professor BRACKEN.

11. Continuation of 10. Two credit hours. Second term. Time to be arranged. Professor BRACKEN.

12. Continuation of 11. Two credit hours. Third term. Time to be arranged. Professor BRACKEN.

13. DESIGN AND COMPOSITION. Two credit hours. First term. Advanced work in Art 10. Prerequisite, Art 10.

14. DESIGN AND COMPOSITION. Two credit hours. Second term. Advanced work in Art 11. Prerequisite, Art 11.

15. DESIGN AND COMPOSITION. Two credit hours. Third term. Advanced work in Art 12. Prerequisite, Art 12.

20. CHARCOAL DRAWING FROM STILL LIFE, NATURE, AND CASTS. One to three credit hours. First term. Time to be arranged. Professor BRACKEN.

21. CHARCOAL DRAWING FROM COSTUMED MODEL. One to three credit hours. Second term. Time to be arranged. Professor BRACKEN.

22. CHARCOAL DRAWING. LANDSCAPE AND STILL LIFE. One to three credit hours. Third term. Time to be arranged. Professor BRACKEN.

30. PENCIL DRAWING FROM STILL LIFE AND NATURE. One credit hour. First term. Time to be arranged. Professor BRACKEN.

31. PENCIL DRAWING FROM LIFE AND STILL LIFE. One credit hour. Second term. Time to be arranged. Professor BRACKEN.

32. PENCIL DRAWING OUT OF DOORS. One credit hour. Third term. Time to be arranged. Professor BRACKEN.

35. PAINTING IN OIL OR WATER COLOR. One to three credit hours. First term. Time to be arranged. Professor BRACKEN.

36. Continuation of 35. One to three credit hours. Second term. Time to be arranged. Professor BRACKEN.

37. LANDSCAPE. One to three credit hours. Third term. Time to be arranged. Professor BRACKEN.

40. CHARCOAL, PENCIL, OR PEN SKETCHING FROM LIFE. Professor BRACKEN.

### ENGINEERING DRAWING

(Office, Brown Hall.)

PROFESSOR FRENCH, ASSISTANT PROFESSOR LEWIS, MR. TIDBALL, MR. ROGERS, MR. MEIKLEJOHN, MR. BOTT, MR. NORRIS.

(Of the courses offered in the Department of Engineering Drawing, the following are open to students in the College of Arts, Philosophy, and Science.)

15. TECHNICAL DRAWING. One and one-half credit hours. Second and third terms. *F., 1 to 3.*

20. MECHANICAL DRAWING. One credit hour. First term. *F., 1 to 3,*

24. FREEHAND DRAWING. One or two credit hours. First term.  
 25. FREEHAND DRAWING. One or two credit hours. Second term.

26. FREEHAND DRAWING. One or two credit hours. Third term.

24, 25, and 26 constitute a continuous year's work.

45. TECHNICAL DELINEATION. Pencil Rendering. Two credit hours. First term. Prerequisite, Drawing 26. *Tu., Th., 10 to 12.*

46. TECHNICAL DELINEATION. Elementary Pen and Ink Rendering. Two credit hours. Second term. Prerequisite, Drawing 29. *Tu., Th., 10 to 12.*

47. TECHNICAL DELINEATION. Brush Rendering. Two credit hours. Third term. Prerequisite, Drawing 45. *Tu., Th., 10 to 12.*

Courses 45, 46, and 47 are designed for students in Biological work, and provide training in rendering in pencil, pen and ink, and brush.

### CIVIL ENGINEERING

(Office, Room 33, Brown Hall.)

MR. CHAMBERLIN, MR. WARD.

(Of the twenty-five courses offered in the Department of Civil Engineering, the following course is open to students of the College of Arts, Philosophy, and Science.)

21. SURVEYING. Three credit hours. Third term. *M., W., F., at 9.* Prerequisite, Mathematics 21, 22, 23, or equivalent. Mr. CHAMBERLIN, Mr. WARD.

### DOMESTIC SCIENCE

(Office, Rooms 1, 3, and 10, Hayes Hall.)

Students may elect courses in either Domestic Art or Domestic Science, but not in both.

DOMESTIC SCIENCE.

PROFESSOR WARDALL

1. SELECTION AND PREPARATION OF FOOD. Four credit hours. First term. Lectures, *Tu., Th., at 9*; laboratory, *Th., F., 1 to 3, or Tu., 10 to 12; W., 8 to 10.* Prerequisite, Chemistry 7 and 12, 44 and 12, or 3 and 45. Professor WARDALL.

2. SELECTION AND PREPARATION OF FOOD. Four credit hours. Second term. Time same as course 1. Prerequisite, Domestic Science 1. Professor WARDALL.

3. SELECTION AND PREPARATION OF FOOD. Four credit hours. Third term. Time same as course 1. Prerequisite, Domestic Science 2. Professor WARDALL.

## DOMESTIC ART

ASSOCIATE PROFESSOR BABB

1. HANDICRAFT. Two credit hours. First term. *W., at 11, and Th., or F., 1 to 3.* To be accompanied by Art 10, 11, and 12, or equivalent. Associate Professor BABB.

2. TEXTILES. Two credit hours. Third term. Time same as course 1. Prerequisite, course 1. Associate Professor BABB.

3. TEXTILES. Two credit hours. Third term. Time same as course 1. Prerequisite, course 2. Associate Professor BABB.

## ELECTRICAL ENGINEERING

PROFESSOR CALDWELL, ASSOCIATE PROFESSOR ANDEREGG, ASSISTANT PROFESSOR HUNT

6. ELECTRICAL ENGINEERING. Two credit hours. First and second terms. *M., Th., at 10.* Prerequisite, Mathematics and Physics 2. Associate Professor ANDEREGG.

7. ELECTRICAL ENGINEERING; LABORATORY. Two credit hours. First and second terms. Time to be arranged subject to available accommodations. Course 6 must accompany this course. Associate Professor ANDEREGG, Assistant Professor HUNT.

8. DIRECT CURRENT DYNAMO MACHINERY. Four credit hours. Second term. *M., Tu., Th., F., at 9.* Prerequisite, Physics 4 and 6, or its equivalent. Associate Professor ANDEREGG.

9. ELEMENTARY DYNAMO; LABORATORY. Four credit hours. Third term. *W., Th., 1 to 5; or F., 1 to 5; S., 8 to 12.* Election subject to available accommodations. Prerequisite, course 8. Associate Professor ANDEREGG, Assistant Professor HUNT.

15. ALTERNATING CURRENT CIRCUITS AND MACHINERY. Two credit hours. Third term. *M., Th., at 10.* Prerequisite, course 9. Professor CALDWELL.

16. Continuation of 15. Three credit hours. First term. *M., W., F., at 11.* Prerequisite, course 15.

17. Continuation of 16. Two credit hours. Second term. *M., W., at 8.* Prerequisite, course 16.

11. ADVANCED DYNAMO; LABORATORY. Three credit hours. Three terms. First and second terms. *Tu., or Th., 10 to 5.* Third term. *M., or Tu., 10 to 5.* Must be accompanied by courses 16 and 17. Professor CALDWELL, Assistant Professor HUNT.

## MECHANICAL ENGINEERING

PROFESSOR MAGRUDER

34. THERMODYNAMICS. Five credit hours. Second term. *M., Tu., W., Th., F., at 8.* Open only by permission of instructor. Professor MAGRUDER.

## MECHANICS

(Office, Room 219, School of Mines Building.)

PROFESSOR J. E. BOYD, ASSISTANT PROFESSOR CODDINGTON

1. STATICS. Five credit hours. First term. *M., Tu., W., Th., F., 8, 9, or 11.* Prerequisite, Mathematics 43. Text-book: Hoskin's Theoretical Mechanics.

2. STRENGTH OF MATERIALS. KINETICS. Five credit hours. Second term. *M., Tu., W., Th., F., 8, 9, or 11.* Prerequisite, Mechanics 1. Text-book: Merriman's Mechanics of Materials, Cambria Steel.

3. KINETICS AND HYDRAULICS. Five credit hours. Third term. *M., Tu., W., Th., F., 8, 9, or 11.* Prerequisite, Mechanics 2. Text-books: Hoskin's Theoretical Mechanics, Goodman's Applied Mechanics.

## METALLURGY AND MINERALOGY

(Office, School of Mines Building.)

PROFESSOR N. W. LORD, ASSOCIATE PROFESSOR SOMERMIER,

MR. DEMOREST

2. MINERALOGY. Three credit hours. Third term. *M., W., F., at 11.* Prerequisites, Mathematics 21, 22, 23, or equivalent, and Chemistry 1. Professor LORD.

3. DETERMINATIVE MINERALOGY. Five credit hours. Third term. *M., Tu., 1 to 5.* Prerequisite, course 2. Professor LORD, Professor SOMERMIER.

5. METALLURGICAL LABORATORY. Five credit hours. Three terms. *W., Th., F., 1 to 4.* Prerequisite, Physics 2, and two years of Chemistry. Associate Professor SOMERMIER.

## GENERAL INFORMATION

### THE BRYAN PRIZE

Through the generosity of Hon. William J. Bryan an annual prize of fifteen dollars is offered for the best essay on the principles underlying the form of government of the United States. Competition for this prize is open to all students of the University. For further information, make inquiry of the head of the department of American History and Political Science.

### HIGH SCHOOL COMMITTEE

In order to serve the schools of the state the Faculty has provided a committee, one of the duties of which is to assist graduates of the University to teaching positions for which they are best fitted. Any student of the University intending to teach is invited to enroll his name with the committee on a blank provided for that purpose. Blanks may be obtained from the Executive Office. Graduates of the University who are already engaged in teaching are also cordially invited to correspond with the appointment committee with a view to bettering their positions. Correspondence is invited from Boards of Education and from Superintendents and Principals of schools in need of teachers. No fee is charged for the services of the committee. The secretary of the committee is Professor J. E. Hagerty, to whom all correspondence should be addressed.

### FEES AND EXPENSES

#### GENERAL CHARGES

All term dues must be paid at the opening of each term as a condition of admission to classes.

**INCIDENTAL FEE.**—A charge of six dollars a term, eighteen dollars a year, is made against all students, under the head of incidental expense. In the case of former students if this fee is not paid until the second day of the term one dollar will be added, and for each succeeding day of delinquency fifty cents will be added.

TUITION.—Tuition is free in the College of Arts, Philosophy, and Science. But students who elect five hours or less in the College of Law pay a fee of \$7.50 per semester; more than five hours, \$22.50.

#### LABORATORY FEES

A fee of one dollar per term is charged in all laboratory courses. In addition to this fee, all students are required to pay for materials consumed. All first year students in elementary chemistry (Chemistry 3, 7, 12) will be required to buy a \$10.00 card. This will cover the expense for the year with reasonable care in the use of supplies.

The laboratory courses, for each of which the fee is one dollar per term, are as follows: Anatomy and Physiology, 3, 4, 5, 9, 11; Astronomy, 2, 4, 5, 6; Bacteriology, 5, 6; Botany, all courses; Chemistry, all courses except 11, 21, 30, 35, 40, 25, 26, 28, 36; Civil Engineering, 21; Domestic Science, 1, 2, 3; Domestic Art, 1, 2, 3; Drawing, 7, 10, 14, 17, 18, 19, 24, 25, 26; Electrical Engineering, 7, 9, 11; Geology, 13, 14, 15, 16, 19, 20, 11, 12; Metallurgy, 3, 5; Physics, 11, 12, 13, 15; Zoology and Entomology, all courses except 26, 27.

#### LOCKER FEE

A fee of one dollar a term is required from those who make use of a locker in the gymnasium.

#### CADET UNIFORMS

The uniform with which the members of the battalion are required to provide themselves costs (without overcoat) about fourteen dollars. It is quiet in pattern, and is designed to be worn in place of civilian dress.

#### GRADUATION FEE

A fee of five dollars, to cover expense of graduation and diploma, is required of each person receiving one of the ordinary degrees from the University, and this fee must be paid before the degree is conferred. A like fee of ten

dollars is charged to each person receiving one of the higher graduate degrees.

#### AUDITOR'S FEES

On presentation to the Bursar of the written consent of the head of a department, and on the payment to the Bursar of an auditor's fee of one dollar, any person engaged in teaching is permitted to attend, in that department, any class or course (not to exceed three hours a week for one-half year) which is announced to be especially for teachers or those intending to teach.

#### ROOMS AND BOARD

The South Dormitory affords unfurnished rooms for students who desire to board themselves and thus reduce their expenses to a minimum. The expense of living in this way is about two dollars per week. Applications for rooms should be made to the President of the University.

Boarding clubs are also formed in the neighborhood of the University. Furnished rooms are rented at seventy-five cents to one dollar a week for each student, and the cost of table board is two dollars to three dollars a week.

Board with furnished rooms can be obtained in private families, within convenient distance of the University, at rates varying from three and a half to five dollars per week. The ruling rate may be taken as four dollars.

#### FELLOWSHIPS

To encourage graduates of this University, and of other similar and approved institutions in this State, to continue their studies and to undertake advanced work leading to the higher degrees, the University has established fellowships in several departments. These demand about one-half of the time of the fellow for laboratory or other similar assistance—as far as possible along the line of his graduate study. The remainder of his time is given to graduate

work. The fellowships pay from \$150 to \$300 for the University year. The following are the present holders of fellowships:

Edna M. McCleery, B. A.....	Botany
Cecil E. Boord, B. A. (Wabash College) ..	Chemistry
Lou Helen Morgan, B. Ph. (Marietta Col).	"
George W. Stratton, B. A. (Uni. of Colo.).	"
J. Walter Sale, A. B. (De Pauw Univ.)...	"
Edgar Witzemann, A. B. (James Milliken University) .....	"
Beatrice H. Sheets, B. A.....	Economics and Sociology
Jessie Hutsinpillar, B. A. (Wellesley)....	English
Sherman D. Chambers, B. S. (Baldwin University) .....	Mathematics
Grace Bareis, B. A. (Wellesley).....	"
S. Morgulis, M. A. (Columbia Univ.)....	Zoology and Entomology
H. H. Severin, M. A. (Univ. of Wis.).....	" " "

### CHRISTIAN ASSOCIATIONS

The Young Men's Christian Association has come to occupy a prominent place in university life. It has a membership of four hundred and forty-eight men, and is affiliated with the World's Student Christian Federation. The Association House furnishes free for the use of its members a reading room, library, magazines and papers, piano, and telephone—a college home.

Religious meetings are held for men on Sunday afternoon; there are also frequent meetings for the promotion of social intercourse and good fellowship. Courses in systematic Bible study and in modern missions are offered. A most helpful feature of the work is that in the interest of new students at the opening of the school year. Desirable rooms and boarding places are found and posted for reference at the Association House. Representatives of the Association meet the trains, assist students in finding satisfactory locations, and endeavor in every way to make them feel at home. The Employment Bureau helps to find work.

A copy of the Students' Handbook, giving information about Columbus, the University, and the various college organizations and activities, will be sent free to prospective students. For this handbook or for further information, address the General Secretary of O. S. U. Y. M. C. A., 239 West Tenth avenue, Columbus, Ohio.

The Young Women's Christian Association holds religious meetings regularly at noon on Tuesdays. This organization is active and efficient in working for the higher interests of the young women. Young women planning to enter the University are invited to correspond with reference to board or rooms with the General Secretary, O. S. U. Y. W. C. A., University Hall, Columbus, Ohio.

### SELF SUPPORT

There is a large amount of work upon the University farm which is assigned to students, preference being given to those who are studying Agriculture. *But the University cannot promise work to all applicants.* Many students find work in private families, in offices, and in various occupations, by means of which they defray a portion of their expenses. A person of ability and energy, who is master of a trade, or who can do good work of any kind, can generally find employment, but prospective students are cautioned against depending wholly upon such uncertain sources of income.

Students should distinctly understand that where they attempt entire or partial self-support they should lengthen the term of study. An employment bureau is maintained at the University where the names of those seeking work and of those desiring workers are recorded. Students should report to the Executive Office from time to time as to their needs and their work. This will enable the authorities to be more helpful than otherwise would be possible.

## DESCRIPTION OF SUBJECTS ACCEPTED FOR ADMISSION

### (A) ENGLISH GROUP

**ENGLISH COMPOSITION AND RHETORIC.** One unit. Each applicant must be able to write clear and correct English, and no applicant will be accepted in English whose work is seriously defective in spelling, punctuation, grammar, and paragraph structure. The proper preparation for this part of the requirement is practice in composition through the four preparatory years, with correction of themes by the teacher and revision by the pupil. Subjects for themes should be taken from the books prescribed for general reading below and also from the pupil's observation and experience. Practice should be afforded in writing narrative, descriptive, exposition and argumentation. Applicants should be familiar with those principles of Rhetoric which are most helpful in elementary composition; viz., the principles of sentence structure, outlining, paragraphs, and choice of words. The amount and kind of work required is indicated in Scott and Denney's *Elementary Composition and Composition-Literature*.

**ENGLISH CLASSICS.** One unit. (a) A thorough knowledge of the subject-matter, form, and structure of Shakespere's *Macbeth*, *Milton's Lycidas*, *Comus*, *L'Allegro*, *Il Penseroso*; Burke's *Speech on Conciliation with America* (or Washington's *Farewell Address* and Webster's *First Bunker Hill Oration*); *Macaulay's Life of Johnson* (or Carlyle's *Essay on Burns*). (b) A general knowledge of the substance of ten books selected from the following groups: Group 1 (two to be selected), Shakespere's *As You Like It*, *Julius Cæsar*, *Merchant of Venice*, *Twelfth Night*, *Henry the Fifth*; Group 2 (one to be selected), Bunyan's *Pilgrim's Progress*, part 1; Bacon's *Essays*, *The Sir Roger de Coverley Papers* in *The Spectator*, *Franklin's Autobiography*; Group 3 (one to be selected), Chaucer's *Prologue*, selections from Spenser's *Faerie Queene*, Pope's *Rape of the Lock*, Goldsmith's *Deserted Village*, Palgrave's *Golden Treasury*, first series, books ii and iii, with special attention to Dryden, Collins, Gray, Cowper, and Burns; Group 4 (two to be selected), Hawthorne's *House of the Seven Gables*, Thackeray's *Henry Esmond*, George Eliot's *Silas Marner*, Dickens' *A Tale of Two Cities*, Scott's

Ivanhoe, Quentin Durward, Goldsmith's Vicar of Wakefield, Mrs. Gaskell's Cranford, Blackmore's Lorna Doone; Group 5 (two to be selected), Emerson's Essays (selected), Ruskin's Sesame and Lilies, Irving's Sketch Book, Carlyle's Heroes and Hero Worship, De Quincey's Joan of Arc and the English Mail Coach, Lamb's Essays of Elia; Group 6 (two to be selected), Palgrave's Golden Treasury, first series, book iv, with special attention to Wordsworth, Keats, and Shelley, Coleridge's Ancient Mariner, Lowell's Vision of Sir Launfal, Scott's Lady of the Lake, Poe's Poems, Tennyson's Gareth and Lynette, Lancelot and Elaine, The Passing of Arthur, Arnold's Sohrab and Rostum, Byron's Mazeppa, The Prisoner of Chillon, Macaulay's Lays of Ancient Rome, and Browning's Cavalier Tunes, Lost Leader, How They Brought the Good News, Evelyn Hope, Home Thoughts from Abroad, Home Thoughts from the Sea, Incident of the French Camp, The Boy and the Angel, One Word More, Herve Riel, Pheidippides.

**ENGLISH LITERATURE.** One unit. A good knowledge of the leading facts in the history of English Literature, as given in Scudder's English Literature, Johnson's History of English and American Literature, or the Introductions by Pancoast, Painter, Halleck, or Newcomer; together with the reading of representative works of literature. This may be offered in lieu of the work in English Classics.

#### (B) HISTORY GROUP

**CIVIL GOVERNMENT.** One-half unit. A good knowledge of the origin, principles, forms, and powers of the national, state, and local governments is expected. Fiske's Civil Government, with a special study of the state from which the student comes, may serve to indicate the amount and kind of knowledge sought.

**UNITED STATES HISTORY.** One-half or one unit. A good knowledge of the main facts and features of American History, especially of the period since 1750, is expected. McLaughlin's History of the American Nation, Montgomery's Student's American History or Hart's Essentials in American History will serve to show the kind and amount of knowledge sought. No credit upon certificate will be accorded in this subject for work done below the ninth grade.

**GENERAL HISTORY OR MEDIAEVAL AND MODERN HISTORY.** One or one-half unit. Adams' European History or Harding's Essentials in Mediæval and Modern History, Myers' Mediæval and Modern History (revised), or an equivalent.

**GREEK AND ROMAN HISTORY.** One-half or one unit. Botsford's Ancient History for Beginners, or West's Ancient World, or Wolfson's Essentials in Ancient History, or an equivalent.

**ENGLISH HISTORY.** One-half or one unit. Higginson and Channing's English History for Americans, or Walker's Essentials in English History, or Cheyney's Short History of England, or an equivalent.

#### (C) MATHEMATICS GROUP

**ALGEBRA.** One unit. Wells, Wentworth, Milne, or an equivalent. Special attention should be given to the four fundamental operations (single and system), factoring, highest common factor, lowest common multiple, fractions and fractional equations, involution, evolution, surds, complex quantities, quadratic equations solved by factoring, by completing the square and the general formula.

**ALGEBRA.** One-half unit. A thorough review of the work above named, irrational equations, simultaneous quadratic equations, higher equations solvable by factoring, ratio, proportion, progressions, theory of exponents, binomial theorem for positive integral exponents, and use of five-place tables of logarithms. It is recommended that this work be taken in the last year of the high school course.

**GEOMETRY.** One unit. Venable, White, Wells, Wentworth, Beman and Smith, or an equivalent. Plane geometry with solution of originals.

**GEOMETRY.** One-half unit. Solid and spherical geometry, with solution of originals given in the text-books named above.

#### (D) SCIENCE GROUP

**PHYSICS.** One unit. Carhart and Chute's Elements, Gage's Elements, Avery's Elements, Millikin and Gale's First Course in Physics, or an equivalent. Four recitation periods per week, including drill on simple numerical problems is recommended. A laboratory period of not less than two hours per week, to accompany the work of the text-book, is strongly urged, but is not required for the present.

**PHYSICAL GEOGRAPHY.** One-half or one unit. Tarr's, Dryer's, Davis', or Gilbert and Brigham's Physical Geography. The class work should be accompanied by a study of the physiographic forms and processes to be seen near the school.

**BOTANY.** One-half or one unit. Equivalent of the work outlined in an elementary text-book (such as Coulter's, Bailey's, Ber-

gin's, Andrews', Leavitt's, Barnes', Atkinson's, or Stevens'), and of a small handbook of the local flora (Kellerman's Spring Botany).

**CHEMISTRY.** One unit. McPherson and Henderson's Elementary Study of Chemistry, together with the Exercises in Chemistry arranged to accompany the same, or an equivalent. The course should consist of at least three recitations and four hours of laboratory work weekly throughout the year.

**PHYSIOLOGY.** One-half unit. Colton's Briefer Course, or an equivalent. No credit will be accorded in this subject for work done below the ninth grade.

**ZOOLOGY.** One-half or one unit. Jordan, Kellogg, and Heath's Animal Studies, Kellogg's Elementary Zoology, Davenport's Introduction, or equivalents, with laboratory or field work.

**GEOLOGY.** One-half unit. Brigham's, Dana and Rice's (revised), Tarr's, or LeConte's may be used as texts. The recitations should be supplemented by study of the geological phenomena and formations found in the vicinity of the school.

#### (E) FOREIGN LANGUAGE GROUP

**LATIN.** Two units. Pronunciation (Roman method); Grammar (an exact knowledge of the inflections). Cæsar, the first four books of the *De Bello Gallico*. Third unite. Cicero, six orations of Cicero, including *Pro Lege Manilia*. Fourth unit. Vergil, the first six books of the *Æneid* with prosody; and prose composition, Daniel, Collar, Bennett, Dodge and Tuttle, or Pearson, entire. Latin cannot be continued as a university study unless at least three units are offered for admission. Pupils should be trained to the systematic use of one of the standard Latin grammars from the outset.

**GREEK.** Two units. Grammar (Goodwin's preferred) and Prose Composition; or White's First Greek Book. Reading: The first three books of Xenophon's *Anabasis*. A third unit will be allowed for preparation in the fourth, fifth, and sixth books of the *Anabasis* and three books of Homer's *Iliad*, and a fourth unit for additional reading in Greek.

**GERMAN.** Two units. The pupil must possess a good pronunciation and be able to read or to translate at sight easy narrative prose, showing an exact and ready knowledge of the declensions

and conjugations of the language. The ordinary principles of syntax and of word-order must be thoroughly mastered and such knowledge shown by the ability to translate easy sentences into German. Some three hundred pages of simple prose and poetry must be read.

Four units. In addition to the above, the applicant must have had two years more of instruction, including the reading of from four to five hundred pages of standard prose and at least one of Schiller's dramas, with not less than fifty pages of work in prose composition. One-half of this latter amount may be offered for a third unit.

**FRENCH.** Two units. Applicants should be able to pronounce French accurately, to read at sight easy French prose, to put into French simple English sentences taken from the language of everyday life or based upon a portion of the French text read, and to answer questions on the rudiments of the grammar as defined below. During the first year the work should comprise: (1) Careful drill in pronunciation; (2) the rudiments of grammar, including the inflection of the regular and the more common irregular verbs, the plural of nouns, the inflection of adjectives, participles, and pronouns; the use of personal pronouns, common adverbs, prepositions, and conjunctions; the order of words in the sentence and the elementary rules of syntax; (3) abundant easy exercises, designed not only to fix in the memory the forms and principles of grammar, but also to cultivate readiness in the reproduction of natural forms of expression; (4) the reading of from 100 to 175 duodecimo pages of graduated texts, with constant practise in translating into French easy variations of the sentences read (the teacher giving the English), and in reproducing from memory sentences previously read; (5) writing French from dictation. During the second year the work should comprise: (1) The reading of from 250 to 400 pages of easy modern (nineteenth century) prose in the form of stories, plays or historical or biographical sketches; (2) constant practise, as in the previous year, in translating into French easy variations upon the texts read; (3) frequent abstracts, sometimes oral and sometimes written, of portions of the text already read; (4) writing French from dictation; (5) continued drill upon the rudiments of grammar, with constant application in the construction of sentences; (6) mastery of the forms and use of pronouns, pronominal adjectives, of all but the rare irregular verb forms, and of the simpler uses of the conditional and subjunctive.

Three units. In addition to the above, applicants must have had a third year of instruction and should be able to read at sight

ordinary French prose or simple poetry, to translate into French a connected passage of English based on the text read, and to answer questions involving an adequate knowledge of syntax.

Four units. In addition to the above, applicants must have had a fourth year of instruction, and should be able to read at sight, with the help of a vocabulary of special or technical expressions, difficult French not earlier than that of the seventeenth century; to write in French a short essay on some simple subject connected with the works read; to put into French a passage of easy English prose and to carry on a simple conversation in French.

SPANISH. Two units. Applicants should be able to pronounce Spanish accurately, to read at sight easy Spanish prose, to put in Spanish simple English sentences taken from the language of everyday life or based upon a portion of the Spanish text read, and to answer questions on the essentials of the grammar. The first year should be spent mainly on the grammar, with easy reading and oral practise; the second devoted to reading good modern Spanish, with grammatical analysis and exercises in writing. The texts read should be chiefly narrative and conversational prose, including one or more prose dramas of the present age.

Three units. In addition to the above, applicants must have had a third year of instruction, and should be able to read at sight ordinary Spanish prose or simple poetry, to translate into Spanish a connected passage of English based on the text read, and to answer questions involving an adequate knowledge of syntax.

Four units. In addition to the above, applicants must have had a fourth year of instruction, and should be able to read at sight, with the help of a vocabulary of special or technical expressions, difficult Spanish, whether prose or poetry; to write in Spanish a short essay on some simple subject connected with the works read; to put into Spanish a passage of easy English prose, and to carry on a simple conversation in Spanish.

## LIST OF ACCREDITED AND RECOGNIZED SCHOOLS IN OHIO.

Accredited schools are those four-year secondary schools whose courses of study have been found by inspection to be capable of satisfactorily preparing students for all colleges of the University.

Recognized schools are those three or four-year secondary schools whose courses of study are not capable of preparing students for all colleges of the University, but which have been found by inspection to cover satisfactorily 10 units of the requirements for admission.

These lists are subject to change from year to year as schools are revisited. Persons are advised, therefore, to consult the latest bulletins and catalogues of the University. A shows that a school is accredited; R, that it is recognized.

School	Superintendent	Principal
Akron, A	H. V. Hotchkiss	D. C. Rybolt
Alliance, R	J. E. Morris	J. E. Vaughan
Andover, R	S. A. Harbourt	Mary McDonald
Arcanum, R	C. E. Thomas	H. L. Senseman
Ashland, R	E. P. Dean	F. C. Clark
Ashtabula, A	E. A. Hotchkiss	Lillian Kurtz
Ashville, R	Stanley Lawrence	
Athens, A	B. O. Skinner	Zella Foster
Baltimore, R	J. H. Horton	J. J. Wagner
Barberton, R	J. M. Carr	G. M. Korns
Barnesville, A	W. R. Butcher	A. J. Gerber
Batavia, R	B. S. Timmons	
Bedford, R	H. L. Rawdon	Miss G. E. Thomas
Bellaire, A	J. R. Anderson	Alice Cunningham
Bellefontaine, A	J. W. MacKinnon	Annie A. Price
Bellevue, R	E. F. Warner	H. C. Bates
Bethel Township,	Alfred Ross	Irene Dornblaser
Clark Co., R	R. W. Crist	Walter Peoples
Bethel Township	C. L. Leahy	Elizabeth Chaney
Miami Co., R	C. A. Arganbright	I. W. Geiger
Blanchester, R	N. D. O. Wilson	
Bluffton, R	J. W. Wyandt	Orville Smith
Bowling Green, A	W. N. Beethan	C. H. Miller
Bryan, A	J. R. Lehman	S. L. Eby
Bucyrus, A	C. J. Foster	Patrick Henry
Cadiz, R	H. Z. Hobson	John H. Harding
Caldwell, R	J. L. Fortney	L. D. Brouse
Cambridge, A	F. P. Geiger	A. J. Huffman
Camden, R		
Canal Dover, A		

School	Superintendent	Principal
Canal Winchester, R	A. A. McEndree	
Canton, A	John K. Baxter	Chas. A. Armstrong
Carey, R	A. J. Nowlan	Mattie Myers
Carthage, R	C. A. Wilson	Louise Sherer
Celina, R	S. Wilkin	J. W. Pogue
Chardon, A	W. R. Davis	Jessie King
Chillicothe, A	M. E. Hard	W. H. Rice
Cincinnati—	F. B. Dyer	
Hughes, A		E. W. Coy
Walnut Hills, A		W. T. Harris
Woodward, A		E. D. Lyon
Cin. Tech. School, A		L. M. Ballou
Circleville, A	C. L. Boyer	W. E. Sealock
Cleveland—	W. H. Elson	
Central, A		Edward L. Harris
East, A		B. U. Rannells
Lincoln, A		James W. McLane
South, A		G. A. Reutenik
West, A		C. L. Lynch
Glenville, A		H. H. Cully
Cleveland Heights, A	C. A. Tilden	C. A. Tilden
Clintonville, R	W. S. Jennings	
College Corner, R	C. E. Gillespie	Edith Francisco
Collinwood, A	Frank P. Whitney	F. C. Rulon
Columbus—	Jacob A. Shawan	
Central, A		W. M. Townsend
East, A		F. B. Pearson
North, A		C. D. Everett
South, A		C. S. Barrett
Columbus School for Girls, A		{ Miss G. L. Jones
Columbus Grove, R	J. T. Begg	{ Miss Alice Gladden
Conneaut, R	Calvin T. Northrop	M. L. Allstetter
Corning, R	F. W. Huston	Louise E. Kahler
Coshocton, A	Herman S. Piatt	
Covington, R	L. J. Bennett	C. E. Bryant
Cumberland, R	G. E. Bell	D. H. Sellers
Cuyahoga Falls, R	R. W. Solomon	W. S. Kingston
Dayton, A	J. W. Carr	H. O. Bolich
Defiance, R	F. E. Reynolds	Chas. L. Loos, Jr.
Delaware, A	W. McK. Vance	
Delphos, A	T. W. Shimp	Maude I. Myers
Delta, R	G. W. Hoffman	I. F. Matteson
DeGraff, R	N. H. Stull	Viola Wilkins
Dennison, R	W. H. Angel	
Dresden, R	E. E. Smock	A. J. Fry
East Cleveland, A	W. H. Kirk	Blanche E. Baker
East Liverpool, A	R. E. Rayman	
Eaton, A	F. B. Bryant	Florence Updegraff
Elyria, A	W. R. Comings	John O'Leary
Euclid, R	H. D. Rankin	H. M. Ebert
		Mary E. Gould

School	Superintendent	Principal
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Fredericktown, R		{ G. S. Sykes
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Friends' Boarding School (Barnes- ville), R	W. W. Borden	H. M. Lowe
	J. E. Collins	
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Georgetown, A	A. F. Waters	E. A. Barnes
Germantown, A	C. W. McClure	T. E. Hughes
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Greenfield, A	E. W. Patterson	Flora Hoover
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Harrison, R	J. S. Trisler	Carlton Henry
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Osborne, R		
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Utica, R	F. P. Householder	
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Wadsworth, R	Charles Haupert	W. A. Franks
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Point; Superior, Blaine; Superior, Nelson Dewey; Tomah; Washburn; Waukesha; Waukesha (Carroll College Academy); Wau-paca; Wausau; Wauwatosa; Whitewater.



The Ohio State University Bulletin is issued fifteen times during the Academic year; monthly in October, November, and June, and bi-weekly in December, January, February, March, April, and May.

VOLUME XIII

NUMBER 11

# Ohio State University Bulletin

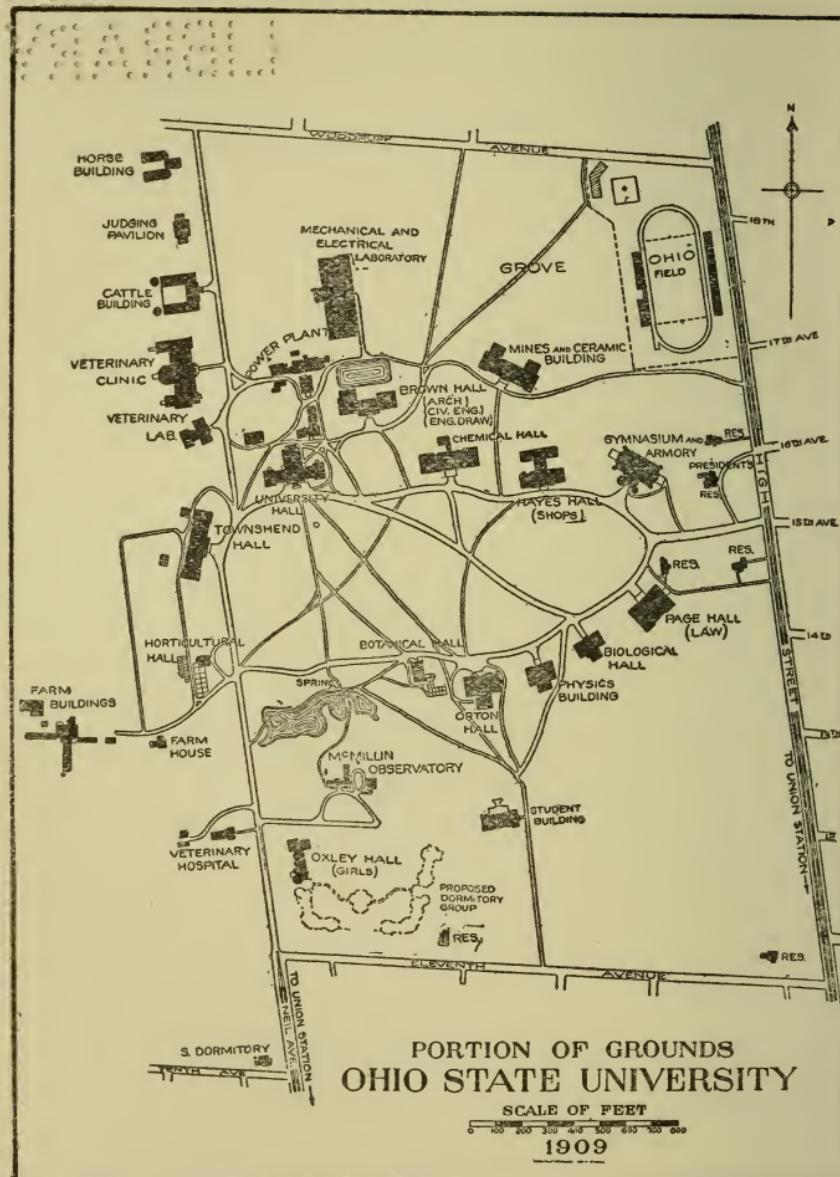
## College of Arts Philosophy and Science



February 25, 1909

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PUBLISHED BY THE UNIVERSITY AT COLUMBUS  
Entered as second-class matter November 17, 1905, at the postoffice  
at Columbus, Ohio, under Act of Congress, July 16, 1894.



## OHIO STATE UNIVERSITY

The Ohio State University, located in Columbus two miles north of the Union Station, is a part of the public educational facilities maintained by the State. It comprises seven colleges:

The College of Agriculture and Domestic Science,  
The College of Arts, Philosophy, and Science,  
The College of Education,  
The College of Engineering,  
The College of Law,  
The College of Pharmacy,  
The College of Veterinary Medicine.

This bulletin is devoted exclusively to the work of the College of Arts, Philosophy, and Science.

(NOTE: In requesting any of the announcement bulletins of the University, address the University Editor, Ohio State University, Columbus, Ohio.)

# UNIVERSITY CALENDAR

## 1909

Entrance examinations (8 a. m.), Tuesday to Saturday, June 15 to 19.

Summer term, June 21 to August 13.

Entrance examinations (8 a. m.), Tuesday to Saturday, September 14 to 18.

First term begins—Registration Day—Tuesday, September 21.

President's Annual Address (11 a. m.), Friday, September 24.

Latest date of admission to candidacy for a degree at the Commencement of June, 1910, Friday, October 1.

Thanksgiving recess, November 25, 26, and 27.

Latest date for filing thesis subject, Wednesday, December 15.

First term ends, Wednesday, December 22.

## CHRISTMAS VACATION

## 1910

Second term begins—Registration Day—Tuesday, January 4.

Washington's Birthday, Tuesday, February 22.

Second term ends, Friday, April 1.

## SPRING RECESS

Third term begins—Registration Day—Wednesday, April 6.

Field Day—Athletic Association—Saturday, May 7.

Competitive Drill—Cadet Regiment—Saturday, May 21.

Final examinations, Friday to Thursday, June 10 to 16.

Latest date for presenting thesis, Saturday, June 11.

Entrance examinations (8 a. m.), Tuesday to Saturday, June 14 to 18.

Latest date for filing bound copy of thesis, Friday, June 17  
Commencement, Wednesday, June 22.

## COLLEGE OF ARTS PHILOSOPHY AND SCIENCE

This College comprises those courses of study that are designed to furnish a liberal education in the languages and literatures, the sciences, mathematics, philosophy, history, politics, administration, economics, sociology, and commerce, as distinguished from the technical and professional courses which constitute the work of the other colleges.

### DEPARTMENTS

The College of Arts, Philosophy, and Science includes work in the following departments: American History and Political Science, Anatomy and Physiology, Astronomy, Bacteriology, Botany, Chemistry, Economics and Sociology, English, European History, Geology, Germanic Languages and Literatures, Greek Language and Literature, Latin Language and Literature, Mathematics, Military Science and Tactics, Philosophy, Physical Education, Physics, Psychology, Romance Languages and Literatures, Zoology and Entomology. The following departments also offer a limited amount of work as elective studies in the College of Arts, Philosophy, and Science: Architecture, Art, Civil Engineering, Domestic Science, Engineering Drawing, Electrical Engineering, History and Philosophy of Education, Mechanical Engineering, Mechanics, Metallurgy and Mineralogy.

### GRADUATE COURSES

The graduate instruction given in the College of Arts, Philosophy, and Science is organized in a Graduate School. A special bulletin describing the organization, admission requirements, and work of the Graduate School may be obtained on application to the University Editor.

## THE LAKE LABORATORY

The University maintains a Lake Laboratory at Sandusky during the summer vacation, which is designed to provide opportunity for the investigation of the biology of the lake region, and for giving certain courses of instruction in the departments of Botany and Zoology and Entomology. For further information write for a special bulletin, which may be obtained from the University Editor.

## BUSINESS ADMINISTRATION AND SOCIAL SERVICE

Students desiring to prepare themselves to pursue a business career or to engage in philanthropic work are invited to send for a special bulletin entitled Courses in Business Administration and Social Service.

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BENJAMIN FRANKLIN THOMAS, Ph. D., Professor of Physics.

\*GEORGE WELLS KNIGHT, Ph. D., Professor of American History and Political Science.

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\*Absent on leave 1908-1909.

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ADOLF BUSSE, Ph. D., Assistant Professor of Germanic Languages and Literatures.

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GRACE MARIE BAREIS, B. A., Assistant Professor of Mathematics.

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FRANK KELTON BAILEY, Ph. D., Instructor in Physics.

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CHARLES SHEARD, M. A., Instructor in Physics.

CLARENCE C. VOGT, M. A., Instructor in Chemistry.

CLARENCE ADDISON DYKSTRA, B. A., Instructor in American History and Political Science.

SAMUEL MORRIS, B. A., Instructor in Chemistry.

SARAH TRACY BARROWS, M. L., Instructor in German.

EDWIN LONG BECK, B. A., Instructor in English.

ROBERT OSCAR BUSEY, M. A., Instructor in German.

LELAND DALE DORNEY, B. A., Instructor in Economics.

VITTORIO FALORSI, D. L., Instructor in Romance Languages.

WILLIAM CLIFFORD MORSE, M. A., Instructor in Geology.

J. THOMAS KIBLER, Assistant in Physical Education for Men.

HOWARD J. LUCAS, B. A., Assistant in Chemistry.

## EXECUTIVE COMMITTEE

THE DEAN, *ex officio*; THE SECRETARY, *ex officio*;  
PROFESSOR BLEILE, PROFESSOR COLE, PROFESSOR BRUCE, and  
PROFESSOR HAINES.

## ADMISSION

Applicants for admission must be at least sixteen years of age. The College is open on equal terms to both sexes.

### UNIVERSITY ENTRANCE BOARD

The admission of students is in charge of the University Entrance Board, which determines the credits which shall be issued on all entrance examinations and certificates, and furnishes all desired information to applicants. Correspondence relating to admission should be addressed to the Entrance Board, Ohio State University, Columbus.

### ADMISSION TO COURSES LEADING TO A DEGREE

There are two modes of admission—by examination and by certificate.

#### ADMISSION BY EXAMINATION

The Entrance Board will conduct entrance examinations June 15 to 19 and September 14 to 18, 1909. A part of the examinations may be taken in June and the remainder in September. All applicants for admission who are not graduates of an accredited or recognized secondary school or approved preparatory school, or who do not possess certificates from the State Board of School Examiners, must take examinations for admission.

**SCHEDULE.**—Examinations will be from 8 to 12 a. m. and from 1 to 5 p. m.

Tuesday	a. m.	History: Greek and Roman, English, General.
"	p. m.	Composition and Rhetoric, Classics, Chemistry, Geology.
Wednesday	a. m.	Algebra, German.
"	p. m.	Plane Geometry, Physical Geography.

Thursday	a. m.	Civics, Solid Geometry, Zoology.
"	p. m.	Beginning Latin, Caesar, Astronomy, Elements of Agriculture, Trigonometry.
Friday	a. m.	Physics, Physiology, Botany.
"	p. m.	U. S. History, French, English Literature.
Saturday	a. m.	Vergil, Cicero, Domestic Science.

### ADMISSION BY CERTIFICATE

Applicants may be admitted without examination on presentation of properly indorsed certificates from such secondary schools as have been accredited\* or recognized by the University, or from approved normal schools, or from the State Board of School Examiners under the following provisions:

(a) If from secondary schools, the certificate must show that the applicant is a graduate in good standing of the school issuing it; and also must state in detail the studies pursued, the text-books used, the amount of work done in each study, the amount of time devoted to it, and the fact that the applicant has passed in the work.

(b) Any entrance requirement not covered by a certificate must be met by examination.

Blank certificates may be obtained by addressing the Secretary of the Entrance Board. Certificates should be filled out and returned to the University as early as possible after the close of schools in June. Since errors are frequently made in transcribing the school record on the blank form, the applicant should verify his certificate before presenting it to the Entrance Board and see that it gives him credit for all his school work.

### REQUIREMENTS BY UNITS

A unit is the equivalent of a course of study covering a school year of not less than thirty-six weeks, with five periods of at least forty-five minutes each per week. To

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\*Regarding accredited and recognized schools, see page 86 and following.

obtain full standing, applicants under twenty-one years of age must have credit by examination or certificate for fifteen units—of which three shall be English, one history, two mathematics, one physics or chemistry, and four language other than English—selected from the following list:

English .....	3 units
(Foreign students may substitute their native language for the English requirement.)	
American History or American History and Civil Government .....	1 unit
Ancient History (Greek and Roman) and Medieval History to 814 A. D.....	1 unit
Medieval and Modern History (from 814 A. D. to the present).....	1 unit
(For the present General History may be counted as a unit, but not in addition to Ancient or Medieval and Modern History.)	
English History .....	1 unit
Algebra (through quadratics).....	1 unit
Algebra (beyond quadratics).....	$\frac{1}{2}$ unit
Geometry (plane).....	1 unit
Geometry (solid).....	$\frac{1}{2}$ unit
Trigonometry .....	$\frac{1}{2}$ unit
Latin .....	2, 3, or 4 units
Greek .....	2, 3, or 4 units
German .....	2, 3, or 4 units
French .....	2, 3, or 4 units
Spanish .....	2, 3, or 4 units
(Not less than two units of any language will be accepted.)	
Physics .....	1 unit
Chemistry .....	1 unit
Physical Geography .....	1 unit
Zoology .....	1 unit
Botany .....	1 unit

Physical Geography	For the present any two of these may be counted together as..... 1 unit
Zoology	
Botany	
Physiology	
Agriculture	The Entrance Board may, after investigating each claim, grant a total credit of not to exceed.. 2 units
Free-hand Drawing	
Manual Training	
Domestic Science	

Preparation in excess of the requirements in any subject will not be credited unless it amounts to one-half unit.

No student under twenty-one years of age will be admitted to college if he is conditioned in more than two of the fifteen units. All entrance conditions must be removed within two years after admission.

Students over twenty-one years of age are admitted in accordance with the provisions stated under "Admission to Special Studies," page 16.

The extent and character of the work required in each subject mentioned above is explained in a special bulletin which will be sent to any address upon request. In general it may be stated that the definitions of the North Central Association of Colleges and Secondary Schools are accepted as our definitions.

## ADMISSION WITH ADVANCED STANDING

Applicants who have completed at least one year's work in an approved college, and who bring official and explicit certificates describing their courses of study and scholarship, and letters of honorable dismissal, will be admitted in accordance with either of two plans:

(1) The entrance units on which the candidate was admitted to the approved college will be accepted at their face value; deficiencies will be made up from the college credits presented, and advanced credit will be given for any remaining satisfactory work; or

(2) One year's work will be accepted in lieu of entrance units and the candidate will be admitted without examination and without conditions, but without any advanced standing on the year's work.

Applicants who have completed less than one year's work in an approved college must satisfy the entrance requirements in the usual way, and will then be given credit for any satisfactory work for which they can offer certificates.

### ADMISSION TO SPECIAL STUDIES

Students who desire to pursue special lines of work and do not desire to become candidates for a degree, will be admitted on the following conditions:

1. The regular entrance requirements must be satisfied.
2. But applicants who are not less than twenty-one years of age, after obtaining credit for the common English branches and for such other subjects as may be necessary to qualify them for the classes that they wish to enter, may, on the presentation of satisfactory reasons, be admitted to any class in the college; provided, that if any student who has been admitted on these conditions afterwards becomes a candidate for a degree, he shall pass the omitted entrance examinations at least twelve months before the degree is conferred.
3. Before entering the College, students desiring to pursue special work are required to lay before the Executive Committee, for approval or modification, a written statement of the end they have in view, the studies proposed for the attainment of that end, and the probable period of attendance. Such students will be held as strictly to their accepted schemes of work as are the regular undergraduates to the course of study.
4. Permission to enter as special undergraduates will be refused to all who fail to give satisfactory evidence of

definiteness of purpose, and will be withdrawn whenever the conditions on which it was granted cease to exist.

### ADMISSION TO GRADUATE WORK

A special bulletin devoted exclusively to the Graduate School may be obtained on application to the University Editor.

### REMOVAL OF ENTRANCE CONDITIONS

The removal of entrance conditions is administered by the Entrance Board. Conditions may be removed (1) by examination (for schedule of examinations, see page 12); or (2) by the substitution of excess work in other approved subjects; or (3) by the substitution of other equivalent work to be done at the University at such times and in such subject as the Entrance Board shall direct. All entrance conditions must be removed before the beginning of the third year of residence at the University.

### REQUIREMENTS FOR GRADUATION

#### UNDERGRADUATE COURSES OF STUDY

The work of the College of Arts, Philosophy, and Science is organized on the group-elective system. Several of the groups correspond in their chief studies and learning aims to the "courses" \* formerly offered, but with much greater flexibility and much freer opportunities for election. Many other "courses" having equally specific aims are also provided in the groups. The groups, so far as at present arranged, number twelve. This number will be increased as reasonable demand may arise for new groups. The characteristic features of each group may be judged from its name, which is made up of the names of the chief studies

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\*Arts or Classical, Latin Philosophy, Modern Language Philosophy, English Philosophy, General Science, Commerce and Administration, Education, Preparatory to Law, Preparatory to Medicine, Preparatory to Journalism.

of the group. The groups at present recommended are given on pages 22 to 24.

About one-third of every student's curriculum is prescribed. Each student is required to lay sufficiently broad foundations, during the first two years, in English, in two other languages to be chosen by himself, in mathematics and one science, or in two sciences to be chosen by himself, and in history, economics, English, or philosophy. The remaining two-thirds of each student's work is elective; but in order to insure substantial results in the studies thus freely chosen, the student is required to continue two of his first-year studies (any two) through the second year, one of his second-year studies (any one) through the third year, and one of his third-year studies (any one) through the fourth year. In order to guard against the danger of too narrow or too wide a range of work, a maximum and a minimum number of departments is fixed in which the student is allowed to work during any one year. In the first and second years the number of departments thus fixed is four or five; in the third and fourth years the number is three or four.

#### SUMMARY AND REQUIREMENTS

On satisfactory completion of 180 term hours under the restrictions prescribed below, the student will be recommended for the Degree of Bachelor of Arts.

The 180 term hours must include the following, amounting to 57 term hours:

- (a) English 1, 2, and 3. (2-2-2) 6 term hours.
- (b) Two of the following languages: (8-8-8) 24 term hours.

Greek 1 or 7, 8, 9; Latin 1, 2, 3;

French 1 or 2; German 1 or 4; Spanish 1 or 2.

(c) Mathematics 31, 32, 33, and 24. (6-6-6) 18 term hours, or  
Two of the following: at least (6-6-6) 18 term hours.  
Mathematics 21, 22, 23; Physics 11 or 2;  
Chemistry 7 or 44 and 12; Botany 21; Zoology 31.  
Geology 17; Physiology 1; Astronomy 1.

(d) One of the following: (3-3-3) 9 term hours.  
European History 1, 2, 3 or 14; American History 1;  
Political Science 1; Economics 30, 31, and 32;  
Psychology 1 and Psychology 1a; Philosophy 100  
and 101; English 8.

For the remaining 123 term hours required for graduation the student may elect from any courses announced in this college (see page 26 and following) for which he is qualified.

#### FIRST YEAR

(a) Fifteen or sixteen hours each term, chosen from the prescribed work indicated above, including English 1, 2, 3.  
(b) Cadet Service (men); Hygiene and Physical Training (women); required throughout the first year.

#### SECOND YEAR

(a) Fifteen hours each term. This must include all the prescribed work not done in the first year; the other work of the second year to be in three or four departments of which at least two shall be departments in which the student has worked during the first year.  
(b) Cadet Service (men); Hygiene and Physical Training (women); required throughout the second year.

#### THIRD YEAR

Fifteen hours each term in three or four departments, at least one to be a department in which the student has worked during the second year.

## FOURTH YEAR

Fifteen hours each term in three or four departments, at least one to be a department in which the student has worked during the third year.

## EXTRA HOURS

A student who has postponed a study in group (b) from the first to the second year, may take sixteen hours in the second year, and by the permission of the Executive Committee a student who has shown exceptional proficiency may be allowed to undertake from one to three extra hours; but in no case will any student be permitted to take more than eighteen hours. No extra hours will be granted to a first-year student, or to any student with conditions outstanding.

## RULE GOVERNING ELECTIONS

Each student enrolled in the College of Arts, Philosophy, and Science must file at the Registrar's office not later than June 1st of each year a complete statement of the courses he wishes to enter the following year. Blanks for this purpose may be obtained of the Registrar.

FEE FOR CHANGES IN SUBJECTS OR  
SCHEDULE

After ten days from registration day changes in subjects or schedule, if made at the instance of the student, shall be made only upon the payment of a fee of \$1.00 for each change. Requests for changes for the second and third terms must be filed with the College Secretary on or before the third day of the term, or the fee of \$1.00 will be assessed for each change made at registration at the request of the student.

## STUDENT ADVISERS

The Faculty of Arts, Philosophy, and Science has provided a system of advisers, the chief objects of which are:

(1) to assist the undergraduate in choosing studies that will result in a well-rounded course and will achieve most economically the purpose which the student has in view in his course; (2) to promote closer personal relations between student and instructor and thus to aid the student, so far as possible, in all matters connected with his university life. On entering the University each student is assigned by the Executive Committee to a temporary adviser to whom he is cordially invited to resort for counsel as often as the need arises. Before the close of the year each student chooses a permanent adviser. Each student is required to secure the signature of his adviser to his election-card in June of each year, and to petition, at any time during the year, for a change in work or for increase or diminution of work.

### FIRST-YEAR OPTIONS

In order to meet the requirements for graduation, the first-year student must arrange his work on one of the following plans:

I. English; two languages; two sciences, or mathematics and one science, or mathematics alone; deferring until the second year the selection from group (d) above.

II. English; two languages; mathematics or science; one subject from group (d); deferring until the second year a second subject from group (c) above.

III. English; one language; two sciences, or mathematics and one science, or mathematics alone; one subject from group (d); deferring until the second year the second language from group (b) above.

In order to assist the student in his choice of work for the first two years, more specific directions are given below in connection with various natural groupings of studies. *These groups are not mandatory.* The student may make other combinations than those suggested, provided his selection of studies fulfills one of the three options given above. In the second year many other combinations are possible.

The time schedule, however, is arranged primarily to fit the combinations recommended. The days and hours at which each study is taught may be found by looking up that study on page 26 (et seq.) of this Bulletin. The title of a group indicates the chief studies of that group.

### STUDY GROUPS

1. CLASSICAL. First year: Greek 1 or 7, 8, 9; Latin 1, 2, 3; English 1, 2, 3; either 6 hours in (c) or 3 hours in (c) and 3 hours in (d). Second year: Greek 7, 8, 9 or 10, 11, 12; Latin 4, 5, 6; begin or continue a modern language, a science and a study in Economics, History, Political Science or Sociology. Before choosing work in (3) or (d), read groups 4 to 12.

2. LATIN, MODERN LANGUAGE. First year: Latin 1, 2, 3; French 1 or 2, or German 1 or 4; English 1, 2, 3, either 6 hours in (c) or 3 hours in (c) and 3 hours in (d). Second year: Latin 4, 5, 6; French or German; English; begin or continue a science and a study in Economics, History, Political Science, or Sociology. Before choosing work in (c) or (d), read groups 4 to 12.

3. MODERN LANGUAGES. First year: Begin or continue French and German. *Not more than one new language should be begun in the first year.* English 1, 2, 3; either 6 hours in (c) or 3 hours in (c) and 3 hours in (d). Second year: Continue French and German; begin or continue a science and a study in Economics, History, Political Science or Sociology; add English 8. Before choosing work in (c) or (d), read groups 4 to 12.

4. GENERAL SCIENCE. First year: French 1 or 2 or German 1 or 4; Chemistry 7 or 44; Mathematics 21, 22, 23; English 1, 2, 3; 3 hours in (d). Second year: A second modern language; a study in Economics, English, History, Political Science or Sociology; one of the following: Astronomy, Chemistry, Physics; one of the following: Botany, Geology, Physiology, Zoology; the remaining time in Mathematics or Science. Students intending to specialize in Chemistry should continue that subject the second year of the course. Those who have Geology in view should take Geology 17 and 11, 12, 13 in their second year.

5. MATHEMATICS, PHYSICS, ASTRONOMY. First year: Mathematics 31, 32, 33, 24; French 1 or 2 or German 1 or 4; English 1, 2, 3; 3 hours in (d). Second year: Mathematics 41, 42, 43; Physics 2; Chemistry 7 or 44; English and a second modern language (German

or French). Third year: Astronomy 1; Physics 12; and either Astronomy 2 or Physics 3; an additional science (3 hours); English or History 2 or 3 hours; German or French unless each has been studied two full years. Instead of Mathematics 31, 32, 33, 24 in the first year, Chemistry 7 or 44 and Mathematics 21, 22, 23 may be chosen, and be followed by Mathematics in the second year.

6. **BIOLOGICAL SCIENCES.** First year: French 1 or 2, or German 1 or 4; Chemistry 7 or 44; Botany 21, 22, 23, or Zoology 31; English 1, 2, 3; 3 hours in (d). Second year: Botany; Zoology 31 or 2; Physiology 1; Geology 17 or Mathematics 21, 22, 23, or Physics 11; and a second modern language. Students preparing for medicine should take Zoology 31 in the first year and Zoology 2 and Physiology 1 in the second year.

7. **ECONOMICS, HISTORY.** First year: Include European History 1, 2, 3, or Economics 30, 31, 32; English 1, 2, 3; French 1 or 2, or German 1 or 4; 6 hours in (c). Second year: Include Economics 30, 31, 32, or 33; European History 1, 2, 3, or 14; American History 1, or Political Science 1; 4 hours in (b). In each of the third and fourth years include two courses in Economics and one in History, or two in History and one in Economics.

8. **HISTORY, POLITICAL SCIENCE, ADMINISTRATION.** First year: Include European History, 1, 2, 3, or 14, or American History 1; English 1, 2, 3; 6 hours in (b), including French 1 or 2, or German 1 or 4; 3 hours in (c). Second year: Include Political Science 1 and the course in History not taken the first year, and Economics 33; 3 hours in (c). The student who has not a reading command of French or German should continue the modern language of the first year. In each of the third and fourth years include either two courses in History and one in Political Science, or one course in History and two in Political Science; and in one of these years Economics 42, 43.

9. **GENERAL BUSINESS.** First year: Include Economics 30, 31, 32; English 1, 2, 3; Geology 17; Mathematics 21, 22, 23; and one of the following: French 1 or 2; German 1 or 4, or Spanish 1 or 2. Second year: Include Economics 33; English 8; Chemistry 7 or 44, or Physics 11 or 2; American History 1, or European History 1, 2, 3; begin or continue a modern language.

10. **SOCIOLOGY, PHILOSOPHY.** First year: Include Economics 30, 31, 32; English 1, 2, 3; Physiology 1; Zoology 31; and French 1 or 2, or German 1 or 4. Second year: Include Economics 33; English 8; Physiology 1 and Philosophy 101; American History 1 or European History 1, 2, and 3; begin or continue a modern language.

11. PHILOSOPHY, EDUCATION. First year: Follow suggestions in Study Group 1, 2, or 3, except that only three hours be taken in (c), and that Psychology 1 and Philosophy 101 be taken as the subject in (d). Second year: Include Philosophy 103, 104; Psychology 2; begin or continue a modern language, a science in (c) and a study in Economics, History, Political Science or Sociology.

12. GENERAL LITERATURE. First year: Continue both languages offered for admission: English 1, 2, 3; 3 hours in (c); European History, 1, 2, 3. Second year: Begin or continue a modern language, a science and two courses in History, including European History 14; English 8. Take a course in Philosophy throughout the third year.

### THE ARTS-LAW COURSE

A candidate for the degree of Bachelor of Arts while registered in the College of Arts, Philosophy, and Science may also register in the College of Law as a candidate for the degree of Bachelor of Laws, *provided* that at the time of seeking such registration in the College of Law (1) he has 135 term hours to his credit in the College of Arts, Philosophy, and Science, including the requisite optional subjects, and exclusive of the credit hours in Military Drill and Physical Training, and (2) has been a student in the College of Arts, Philosophy, and Science of this University at least one year, and (3) has included (or with the further work in the College of Arts, Philosophy, and Science mentioned in the next paragraph shall complete) sufficient courses to amount to thirty term hours in one or more of the five subjects: American History, European History, Economics, Sociology, and Political Science.

A student so registered in the two colleges must during his first year of double registration complete sufficient further work in the College of Arts, Philosophy, and Science to make his credits in that college aggregate 150 term hours, exclusive of the credit hours in Military Drill and Physical Training. When he has done this and has completed in the College of Law the first year of the course for the degree

of Bachelor of Laws, he will be recommended for the degree of Bachelor of Arts; and when he has completed the second and third years of such course in the College of Law, he will be recommended for the degree of Bachelor of Laws.

Application to enter the combined course must be filed with the Dean of the Arts College before registration day at the beginning of the year in which the student is eligible to enter the combined work.

No credit in the College of Arts, Philosophy, and Science will be given for work done in the College of Law except as above provided, but regular fourth-year students in the former college may by special permission take a limited amount of the work in the College of Law without credit in the College of Arts, Philosophy, and Science.

The work of all students taking studies in the two colleges at the same time is under the jurisdiction of a joint committee, consisting of Professor Denney, Dean of the College of Arts, Philosophy, and Science; Dean of the College of Law; Professors Seibert, Page, and Bruce.

### GRADUATE COURSES

A special bulletin devoted to the work of the Graduate School may be obtained on application to the University Editor.

## ANNOUNCEMENT OF DEPARTMENTS

### AMERICAN HISTORY AND POLITICAL SCIENCE

(Office, Room 207, University Hall)

PROFESSOR KNIGHT, PROFESSOR SPENCER, ASSISTANT PROFESSOR TANNER,  
MR. DYKSTRA

#### I AMERICAN HISTORY.

1. POLITICAL HISTORY OF THE UNITED STATES. Three credit hours. Three terms. *M., W., F., at 8, 9, 11, or 1.* Professor KNIGHT, Assistant Professor TANNER, Mr. DYKSTRA.

An outline course covering the period 1600-1900, considering political, economic, and personal aspects of American history from the origins to the present day. The *Epochs* series, by Thwaites, Hart, and Wilson, will be used as text-books, supplemented by outside reading in the works of Fiske, the *American Statesmen* series, and the *American Nation* series. Recitations and reports. This must precede all other courses in American history.

2. THE AMERICAN COLONIES, 1600-1763. Three credit hours. Three terms. *M., W., F., at 2.* Assistant Professor TANNER.

An institutional study of the origin and development of the American colonies, the growth of self-government, and the development of imperial control. Lectures, quiz, and reports.

\*4. THE SLAVERY STRUGGLE AND ITS RESULTS, 1800-1900. Three credit hours. Three terms. *M., W., F., at 11.* Given biennially, alternating with Course 6. Professor KNIGHT.

A detailed study of the development of slavery in its connection with and influence upon the constitutional and political history of the country, the rise and fall of parties, the divergence of the sections; the Civil War and its results; the reconstruction of the southern states and the readjustment of society and the states to the new status of the negro. Lectures, quiz, and reports.

6. HISTORY OF AMERICAN DIPLOMACY, 1776-1900. Three credit hours. Three terms. *M., W., F., at 11.* Given biennially, alternating with Course 4. Professor KNIGHT.

A systematic study of the diplomatic history of the United States; the birth, evolution and variations of foreign relations and

\*Not given in 1909-1910.

policy, together with a detailed investigation of the circumstances attending the various acquisitions of territory in the process of American expansion. Lectures, quiz, and reports.

\*7. POLITICAL PARTIES IN THE UNITED STATES, 1789-1900. Two credit hours. Three terms. *Tu., Th., at 2.* Given biennially, alternating with Course 15. Mr. DYKSTRA.

A detailed study of the rise, progress and decline of the several parties, with special reference to their social, geographical and personal composition, and their effect on legislation and presidential elections. Lectures, quiz, and reports.

\*10. SEMINARY FOR RESEARCH IN AMERICAN HISTORY. Two credit hours. Three terms. Time to be arranged. Prerequisite, two courses in American history. Professor KNIGHT.

Each student works on some individual subject of investigation in the field of the department. So far as possible the subjects are so selected as to have a close interrelationship. At the meeting of the seminary the results of the investigations are presented and discussed.

12. THE REVOLUTIONARY AND CRITICAL PERIOD, 1763-1789. Two credit hours. Three terms. *M., F., at 2.* Given biennially. Professor SPENCER.

An examination of the constitutional relations of the American colonies to the British empire; of the political, commercial, and personal causes of the revolt, and the process by which they co-operated to bring about separation; of the radical movement and the reaction from it; of the constructive elaboration of written constitutions by the states and for the Union. Lectures, quiz, and reports.

15. THE HISTORY OF THE WEST. Two credit hours. Three terms. *Tu., Th., at 2.* Given biennially, alternating with Course 7. Mr. DYKSTRA.

A study of the development and organization of the western country; the conditions and character of western migration; the economic, political, and social aspects of the occupation of American territory; and the results on national development. Lectures, quiz, and reports.

16. CONSTITUTIONAL HISTORY OF THE UNITED STATES. Two credit hours. Three terms. *M., F., at 10.* Mr. DYKSTRA.

An advanced course considering the constitutional questions

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\*Not given in 1909-1910.

before the American people during the period from 1787 to 1860; the constitution in the convention, its development and interpretation as influenced by the executive, congress, and the courts in such controversies as those of broad and strict construction, nullification, the bank, and the tariff. Lectures, quiz, and reports.

#### GRADUATE COURSES

13. RECONSTRUCTION OF THE SOUTH, 1863-1900. Two credit hours. Three terms. *Tu., Th., at 11.* Professor KNIGHT.

An intensive study of the reconstruction era, the legislation of congress and its effects in the South, and the influence of the era upon national history.

14. GRADUATE SEMINARY IN AMERICAN HISTORY AND INSTITUTIONS. Three terms. *Tu., at 4.* Professor KNIGHT.

Some limited field will be made the subject of co-operative study by the seminary. So far as possible the investigation will be in the sources.

#### II. POLITICAL SCIENCE

1. CONSTITUTIONAL GOVERNMENT. Three credit hours. Three terms. *M., W., F., at 9 or 1.* Prerequisite, American History 1, or European History 1, 2, and 3, or 14, or a substitute acceptable to the department. This course must precede all other courses in political science except 4. Professor SPENCER, Assistant Professor TANNER, Mr. DYKSTRA.

A comparative study of modern governments, American and European; their legislative, executive, and judicial institutions, central and local; the constitutional distribution of powers to governmental organs. Wilson, *The State*, will be used as a text-book, supplemented by readings in Bryce, *The Federalist*, Dicey, and Lowell. Lectures, quiz, and reports.

4. INTERNATIONAL LAW. Two credit hours. Three terms. *Tu., Th., at 10.* Prerequisite, one course in European history and one course in American history. Professor KNIGHT.

A study of the principles of international law in their growth and present status, together with an examination of some of the unsettled questions in the field. Lawrence, *Principles of International Law*, to be used as a text-book, with frequent citations of authorities to be read, and with some leading cases to be thoroughly examined.

\*6. THE GOVERNMENT OF COLONIES AND DEPENDENCIES. Two

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\*Not given in 1909-1910.

credit hours. Three terms. *Tu., Th., at 3.* Given biennially, alternating with Course 12. Assistant Professor TANNER.

A comparative study of colonial policies, the types of colonial government, and the problems of administration of present-day dependencies. Lectures, quiz, and reports.

8. MUNICIPAL GOVERNMENT AND PROBLEMS. Two credit hours. Three terms. *Tu., Th., at 11.* Given biennially, alternating with Course 13. Professor SPENCER.

A comparative study of the *city*, in ancient and modern times, in America, England, and Europe; lessons from experience, projects for reform. Lectures, quiz, and reports.

12. COMPARATIVE POLITICS. Two credit hours. Three terms. *Tu., Th., at 3.* Given biennially, alternating with Course 6. Assistant Professor TANNER.

An examination of those institutions, governmental and social, which have to do with the expression of the will of the state. Special attention will be given to the constituent and legislative functions, to the problems of election and representation, and the organization and methods of political parties. Lectures and reports.

\*13. COMPARATIVE ADMINISTRATION. Two credit hours. Three terms. *Tu., Th., at 11.* Given biennially, alternating with Course 8. Professor SPENCER.

This course will include (1) a study of the principles of administration, the methods for organizing the agencies for execution of the will of the state, and the relation of the *officer* to government and the community; (2) a description of the administrative systems of Ohio, the United States, England, France, and Prussia. Lectures and reports.

15. INTRODUCTION TO JURISPRUDENCE. Two credit hours. Three terms. *Tu., Th., at 9.* Professor SPENCER.

A preliminary study of legal concepts. Robinson, *Elements of American Jurisprudence*, will be used as a text-book, supplemented by readings in the works of Blackstone, Austin, Sohm, and Holland, and in American cases.

#### GRADUATE COURSES

10. POLITICAL THEORIES. Two credit hours. Three terms. *M., F., at 3.* Professor SPENCER.

An historical sketch of the successive schools of political philosophy from Aristotle to Montesquieu, as outlined in Dunning's

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\* Not given in 1909-1910.

*History of Political Theories*; followed by an examination of the eighteenth and nineteenth centuries, tracing the two processes, philosophical analysis and political experience, which have combined to produce modern doctrines of sovereignty, government, and political liberty. Lectures and reports.

16. SEMINARY IN POLITICAL SCIENCE. *M., at 4.* Professor SPENCER.

Students will pursue independent investigations, meeting once a week for conference and criticism. The topic for consideration in 1909-10 will be American Legislative Problems.

ANATOMY AND PHYSIOLOGY

(Office, Room 12, Biological Hall)

PROFESSOR BLEILE, ASSISTANT PROFESSOR SEYMOUR

1. HUMAN ANATOMY AND PHYSIOLOGY. Three credit hours. Three terms. *M., W., F., at 8 or 9.* Must be preceded or accompanied by a course in chemistry. Professor BLEILE, Assistant Professor SEYMOUR.

3. CHEMICAL PHYSIOLOGY. Three credit hours. Third term. *Th., F., 1 to 4.* Professor BLEILE.

4. HISTOLOGY AND HISTO-CHEMISTRY. Five credit hours. Three terms. *M., Tu., W., 1 to 4.* Professor BLEILE, Assistant Professor SEYMOUR.

5. MICROSCOPY AND URINARY ANALYSIS. Two credit hours. Third term. Professor BLEILE and Assistant Professor SEYMOUR.

9. PHYSIOLOGICAL LABORATORY. Three credit hours. Three terms. Professor BLEILE.

11. PHYSIOLOGICAL LABORATORY. Five credit hours. Three terms. Professor BLEILE.

ANCIENT ART

(See Greek Language and Literature)

ASTRONOMY

(Office, the Emerson McMillin Observatory)

PROFESSOR H. C. LORD, ASSISTANT PROFESSOR MANSON

1. GENERAL ASTRONOMY. Three credit hours. Three terms. *M., W., F., at 9.* Assistant Professor MANSON.

2. ASTRONOMY, GEODESY, AND LEAST SQUARES. Three credit hours. Three terms. *M., W., F., at 11.* Professor LORD and Assistant Professor MANSON.

7. ADVANCED ASTRONOMY. Three to five credit hours. Three terms. Prerequisite, calculus. Professor LORD.

### BACTERIOLOGY

(Office, Veterinary Laboratory Building)

PROFESSOR MORREY, ASSOCIATE PROFESSOR MCCAMPBELL, MR. GROSVENOR

These courses in Bacteriology are open to advanced undergraduate and graduate students only. The instructor in charge must be consulted before electing.

5. GENERAL BACTERIOLOGY. Three to five credit hours. First term. Lectures, *Tu., at 9 or M., at 11;* quiz, *Th., at 9 or F., at 11;* laboratory, *Tu., Th., or W., F., 1 to 4.* Professor MORREY, Associate Professor McCAMPBELL, Mr. GROSVENOR.

Making of media, cultures, staining methods, physiological properties.

7. PATHOGENIC BACTERIA. Three to five credit hours. Second and third terms. Same time as Course 5. Prerequisite, 5. Professor MORREY, Associate Professor McCAMPBELL, Mr. GROSVENOR.

10. WATER EXAMINATION, SEWAGE DISPOSAL, WATER FILTRATION. Three to five credit hours. Second and third terms. Prerequisite, 5. Lecture, *Tu., at 11;* quiz, *Th., at 11;* laboratory, *M., W., 1 to 4.* Professor MORREY.

11. BACTERIOLOGICAL CHEMISTRY (enzymes). Three to five credit hours. Second and third terms. One lecture, one quiz, two to six hours laboratory work. Prerequisite, 5. Time to be arranged. Professor MORREY.

6. IMMUNITY AND SERUM THERAPY. Three to five credit hours. Three terms. Lectures, *M., F., at 11;* laboratory, to be arranged. Prerequisites, 5 and 7, or equivalents. Associate Professor McCAMPBELL.

Preparation of toxins, antitoxins, vaccines and immune serums.

12. PATHOGENIC PROTOZOA. Three to five credit hours. Three terms. Two lectures, two to six hours laboratory work. Prerequisites, 5 and 7, or equivalents. Associate Professor McCAMPBELL.

15. SPECIAL PROBLEMS IN BACTERIOLOGICAL CHEMISTRY. Three to five credit hours. Three terms. Conferences, library, and laboratory work. Prerequisites, 5 and 7, or equivalents. Professor MORREY.

BOTANY  
(Office, Botanical Hall)

ASSOCIATE PROFESSOR SCHAFFNER, ASSISTANT PROFESSOR GRIGGS, ASSISTANT PROFESSOR DACHNOWSKI, MISS DETMERS

9. DENDROLOGY. Two or three credit hours. Third term. Time to be arranged. Associate Professor SCHAFFNER, Miss DETMERS.

11. LABORATORY WORK IN ECONOMIC BOTANY. Two to five credit hours. Three terms. Laboratory open daily.

15. EDIBLE AND POISONOUS MUSHROOMS Two credit hours. Laboratory and field work. Three terms. Prerequisite, Course 21, or equivalent. Laboratory open daily. Associate Professor SCHAFFNER, Miss DETMERS.

17. FOREST BOTANY. Three terms. Four credit hours. Lectures *Tu.*, *Th.*, at 3. Laboratory, *Tu.*, *Th.*, 1 to 3. Prerequisite, 6, 7, 8, or 21. Assistant Professor DACHNOWSKI.

20. FIELD WORK ON LOCAL FLORA. Two credit hours. First or third term. *S.*, all day. Prerequisite, Elementary Botany, Assistant Professor GRIGGS.

21. GENERAL BOTANY. Three credit hours. Three terms. Lecture, *W.*, at 9; laboratory, *Tu.*, *Th.*, 8 to 10. Text-books: Curtis' Nature and Development of Plants, Schaffner's Laboratory Outlines for General Botany. Associate Professor SCHAFFNER.

## FOR ADVANCED UNDERGRADUATES AND GRADUATES

24. PLANT PHYSIOLOGY. Three to five credit hours. Three terms. Laboratory and field work. Prerequisite, Courses 6, 7, 8, or 21, or equivalent. Time to be arranged. Assistant Professor DACHNOWSKI.

The course is an experimental study of the soil, air, and biotic relations of plants. It aims to provide information upon such phases of nutrition, growth, movement, and the tropisms of plants as have an educational value to students in agriculture, forestry, and general biology.

25. ADVANCED MORPHOLOGY. Three to five credit hours. Three terms. Laboratory, *W.*, 1 to 4. Other hours to be arranged. Prerequisite, Courses 6, 7, 8, or 21, or equivalent. Assistant Professor GRIGGS.

This course is intended to complete the morphological training begun in the first year. It includes instruction in microtechnique. Whenever possible this course should be accompanied by Course 35.

26. CYTOLOGY AND MICROTECHNIQUE. Five credit hours. Three terms. Laboratory open daily. Prerequisite, Course 25. Associate Professor SCHAFFNER.

27. SYSTEMATIC BOTANY. Three to five credit hours. Three terms. Laboratory open daily. Prerequisite, Courses, 6, 7, 8, or 21. Associate Professor SCHAFFNER.

32. MINOR INVESTIGATIONS. One to three credit hours. Three terms. Prerequisite, Courses 6, 7, 8, or 21. Time to be arranged. Associate Professor SCHAFFNER, Assistant Professor GRIGGS, Assistant Professor DACHNOWSKI.

35. EVOLUTION OF PLANTS. One credit hour. Lectures. Prerequisite, any one year course in botany. Three terms. *M.*, at 4. Associate Professor SCHAFFNER.

36. SEMINARY. One credit hour. Three terms. Prerequisite any one year course in botany. Time to be arranged.

This course should be elected only in connection with other advanced work.

#### FOR GRADUATES

28. RESEARCH IN SYSTEMATIC BOTANY. Five credit hours. Three terms. Laboratory open daily. Prerequisite, Courses 6, 7, 8, or 21. Associate Professor SCHAFFNER.

29. RESEARCH IN MORPHOLOGY AND CYTOLOGY. Three to ten credit hours. Three terms. Laboratory open daily. Prerequisite, 26 or equivalent. Associate Professor SCHAFFNER, Assistant Professor GRIGGS.

30. MONOGRAPHIC WORK. Five to ten credit hours. Three terms. Prerequisite, Course 27, or equivalent. Associate Professor SCHAFFNER.

31. RESEARCH IN PHYSIOLOGY AND ECOLOGY. Five to ten credit hours. Three terms. Prerequisite, Courses 24 or 25, or equivalent. Assistant Professor DACHNOWSKI.

#### CHEMISTRY

(Office, Chemistry Hall)

PROFESSOR MCPHERSON, EMERITUS PROFESSOR NORTON, PROFESSORS HENDERSON, FOULK, ASSOCIATE PROFESSOR EVANS, ASSISTANT PROFESSOR WITHROW, MR. VOGT, MR. MORRIS, MR. LUCAS, MR. SALE, AND DEPARTMENT FELLOWS

7. ELEMENTARY CHEMISTRY. Four credit hours. First and second terms. One lecture, one quiz, six hours laboratory work weekly. Lecture, *M.*, at 8 or 3; quiz, to be assigned. Laboratory,

*M.*, *F.*, 9 to 12; *Tu.*, *Th.*, 9 to 12; *M.*, *Tu.*, 1 to 4; *Th.*, *F.*, 1 to 4; or *W.*, 1 to 4, *S.*, 8 to 11. Associate Professor EVANS, Assistant Professor WITHROW, Mr. VOGT, Mr. MORRIS, and department fellows.

This course is arranged for students who have not presented chemistry as an entrance requirement. Students taking this course will follow with Course 12, third term.

44. GENERAL CHEMISTRY. Four credit hours. First and second terms. One lecture, one quiz and six hours laboratory work weekly. Lecture, *W.*, at 9; quiz, to be assigned; laboratory, same as for Chemistry 7. Professors McPHERSON, HENDERSON, Associate Professor EVANS, Assistant Professor WITHROW, Mr. VOGT, Mr. MORRIS, and department fellows.

This course is arranged for students who have had an acceptable course in elementary chemistry in a secondary school. Students taking this course will follow with Course 12, the third term.

12. QUALITATIVE ANALYSIS. Four credit hours. Third term. One lecture, one quiz, six hours laboratory work weekly. Prerequisite, Chemistry 7 or 44. Lecture, *M.*, at 8 or 3; *W.*, at 9; quiz, to be assigned; laboratory hours, same as scheduled for Chemistry 7 or 44. Associate Professor EVANS, Assistant Professor WITHROW, Mr. VOGT, Mr. MORRIS, and department fellows.

This is a general introductory course in qualitative analysis.

21. ADVANCED GENERAL CHEMISTRY. Two credit hours. First, second, and third terms. Two lectures weekly. *Tu.*, *Th.*, at 11. Prerequisite, Chemistry 7 or 44. Professor HENDERSON.

This course consists of reviews and extends the work in general chemistry.

37. QUALITATIVE ANALYSIS. Four credit hours. First term. One lecture, nine hours laboratory work weekly. Time to be arranged. Prerequisite, Chemistry 7 or 44. Professor FOULK, Mr. SALE.

This is an elementary course in qualitative analysis similar to Course 12.

20. QANTITATIVE ANALYSIS. Four credit hours. First, second and third terms. One lecture, nine hours laboratory work weekly. Lecture, *M.*, at 1. Laboratory open forenoons and afternoons. Prerequisite, Chemistry 12 or 37. Professor FOULK, Mr. SALE.

First principles of gravimetric and volumetric analysis. This course must be accompanied by Chemistry 40, except by special permission of the instructor. It is also desirable that it should be accompanied by Chemistry 21.

40. CHEMICAL PROBLEMS. One credit hour. First and second terms. *F., at 11.* Professor FOULK.

Extended practice in the solution of chemical problems pertaining to analytical chemistry. This course is arranged to accompany Chemistry 20.

77. THE READING OF CHEMICAL LITERATURE. Two credit hours. Second term. Time to be arranged. Prerequisite, German 1. Professor FOULK.

The main object of this course is to afford practice in the rapid reading of German chemical literature, the selections being made with special reference to the technical terms of the science.

FOR ADVANCED UNDERGRADUATES AND GRADUATES

46. ORGANIC CHEMISTRY. Two credit hours. First, second, and third terms. Two lectures weekly. *Tu., Th., at 10.* Prerequisite, Courses 20, and 21, except by special permission of the instructor. Professor MCPHERSON.

General course in organic chemistry. Whenever possible this course should be accompanied by Chemistry 47.

47. ORGANIC CHEMISTRY. Two or three credit hours. First, second, and third terms. Six or nine hours laboratory work weekly. Laboratory open afternoons. This course must be accompanied or preceded by Course 46. Professor MCPHERSON, Mr. LUCAS.

Preparation of typical organic compounds.

15. SANITARY ANALYSIS. Four credit hours. Third term. Two lectures, four hours laboratory work weekly. Lectures, *Tu., Th., at 10.* Laboratory open forenoons and afternoons. Prerequisite, Chemistry 20. Professor FOULK.

A study of the methods of sanitary water analysis and the interpretation of results.

48. QUALITATIVE ANALYSIS. Advanced course. Three to five credit hours. Third term. One lecture, six to twelve hours laboratory work weekly. Time to be arranged. Prerequisite, Chemistry 20. Professor FOULK.

Extended work in general qualitative analysis; practice with insoluble substances; use of the spectroscope, etc.

49. QUANTITATIVE ANALYSIS. Advanced course. Three to five credit hours. First and second terms. One lecture, four to twelve hours laboratory work weekly. Time to be arranged. Prerequisite, Chemistry 20. Professor FOULK.

Continuation of Chemistry 20; more difficult analytical methods.

30. PHYSICAL CHEMISTRY. Three credit hours. First and second terms. Three lectures weekly. *M., W., F., at 8.* Prerequisite,

Chemistry 20, 21; also Course 46, except by special permission of the instructor. Professor HENDERSON.

A general course in the theory of chemistry.

50. PHYSICAL CHEMISTRY. Three credit hours. Third term. Nine hours laboratory work weekly. Time to be arranged with instructor. Prerequisite, Chemistry 30. Professor HENDERSON.

A laboratory course in selected physical-chemical exercises.

32. INDUSTRIAL CHEMISTRY. Four credit hours. First and second terms. Two lectures, six hours laboratory work weekly. *Tu., Th., at 8.* Laboratory, *W., Th., 1 to 4.* Prerequisite, Chemistry, 20, 21, 46, 47. Assistant Professor WITHROW.

Industrial applications of chemistry.

35. RARE ELEMENTS. Three credit hours. Third term. Three lectures weekly. *M., W., F., at 8.* Prerequisite, Chemistry 20 and 21. Professor HENDERSON.

A general study of the more unfamiliar elements.

71. TECHNICAL ANALYSIS. Four credit hours. Third term. One lecture, nine hours laboratory work weekly. Lecture, *Tu., at 11.* Laboratory open all day. Prerequisite, Course 20. Professor FOULK.

The chemical examination of various commercial products.

17. INORGANIC PREPARATIONS. Two or three credit hours. First or second terms. Six to nine hours laboratory work weekly. Laboratory open afternoons. Prerequisite, Courses 20, 21. Professor HENDERSON.

Practice in preparing some typical inorganic substances.

72. APPLIED ELECTRO-CHEMISTRY. Three credit hours. Second and third terms. One lecture, six hours laboratory work weekly. Time to be arranged with instructor. Prerequisite, Courses 20, 21, 46, 47. Assistant Professor WITHROW.

#### FOR GRADUATES

41. PHYSICAL CHEMISTRY. Three credit hours. First, second, and third terms. Nine hours laboratory work weekly. Time to be arranged. Prerequisite, Chemistry 30. Professor HENDERSON.

An extended course in physical-chemical exercises. While this course extends through the year, students may elect any one or two terms.

29. RESEARCH WORK. Five to ten credit hours. First, second, and third terms. Library and laboratory work. Time arranged with instructor. Professors McPHERSON, HENDERSON and FOULK, Associate Professor EVANS and Assistant Professor WITHROW.

27. ORGANIC CHEMISTRY. Advanced course. Three to five

credit hours. First, second, and third terms. Library and laboratory work. Time arranged with instructor. Prerequisite, courses 46 and 47. Professor MCPHERSON.

Extended practice in the preparation of typical organic compounds, their purification and analysis.

25. HISTORICAL CHEMISTRY. Two credit hours. Second term. Two lectures weekly, *Tu., Th., at 8*. Prerequisite, Courses 30, 46, and 47. Professor HENDERSON.

This course consists of a general survey of the development of chemistry, particularly of chemical theory. Given in 1909-10, and in alternate years thereafter.

26. CHEMICAL SEMINARY. One credit hour. First, second, and third terms. *W., at 11*.

Discussion of papers. For advanced and graduate students.

\*28. ORGANIC CHEMISTRY. Two credit hours. Third term. Two lectures weekly. Prerequisite, permission of the instructor in charge. Professor MCPHERSON.

This course consists in the presentation and discussion of some important topics in the field of organic chemistry. The course is offered biennially. Subject for 1908-1909, "Fischer's Work on the Proteids." The subjects discussed in this course vary from year to year so that it may be elected by the same student in different years.

73. INORGANIC PREPARATIONS. Three credit hours. First, second, and third terms. Library and laboratory work. Time to be arranged with instructor. Prerequisite, Course 17. Professor HENDERSON.

An extended course in the preparation of typical inorganic compounds, including those of the rare elements. The course is arranged for advanced students only. While the course extends through the year, the students may elect any one or two terms.

74. INORGANIC CHEMISTRY. Two credit hours. First term. Two lectures weekly. *Tu., Th., at 8*. Prerequisite, Course 30. Professor HENDERSON.

This course is a course of lectures to advanced students on selected topics. The topics change from year to year so that the course may be elected by the same student in consecutive years. The topic (a) for 1908-09 is "The Phase Rule." For 1909-10 the topic is (b) "The Chemical Aspects of Radioactivity."

75. ANALYTICAL CHEMISTRY. Two credit hours. Second term. Two lectures weekly. Time to be arranged. Prerequisite, permission of the instructor. Professor FOULK.

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\*Not given in 1909-1910.

This course is arranged for graduate students only. Subject, 1909-10, "Selected Topics Pertaining to Analytical Chemistry." Atomic weights, adsorption, theory of indicators, and precipitation will be discussed.

76. ORGANIC CHEMISTRY. Two credit hours. Third term. Two lectures weekly. Time to be arranged. Prerequisite, permission of the instructor in charge. Associate Professor EVANS.

This course is arranged for graduate students only and is offered biennially, alternating with Course 28. Subject for 1909-10, "Special Chapters in Organic Nitrogen Derivatives; Uric Acid Series; Indigo, Typical Alkaloids, and Dyes." The course may be elected in different years by the same student.

### ECONOMICS AND SOCIOLOGY (Office, Room 211, University Hall)

PROFESSOR HAGERTY, PROFESSOR HAMMOND, PROFESSOR BOWNOCKER,  
ASSISTANT PROFESSOR MCKENZIE, ASSISTANT PROFESSOR LOCK-  
HART, MR. GEPHART, MR. DORNEY, MR. WALLIS,  
MR. REEDER

#### I. ECONOMICS

Students who plan to do considerable work in Economics should take Courses 30, 31, and 32, as introductory to all other courses, and should take at the same time Geology 17. Those who intend to take but one year of work in Economics and Sociology should take Economics 33.

30. INDUSTRIAL AND SOCIAL HISTORY OF ENGLAND. Three credit hours. First term. *M., W., F., at 8, 9, or 2.* Open only to first and second-year students. Assistant Professor MCKENZIE and Mr. GEPHART.

Text-book, lectures, and assigned readings.

31. INDUSTRIAL AND SOCIAL HISTORY OF THE UNITED STATES. Three credit hours. Second term. *M., W., F., at 8, 9, or 2.* Open only to first and second-year students. Assistant Professor MCKENZIE and Mr. GEPHART.

Text-book, lectures, and assigned readings.

32. COMMERCIAL AND ECONOMIC GEOGRAPHY. Three credit hours. Third term. *M., W., F., at 8, 9, or 2.* Open only to first and second-year students. Assistant Professors MCKENZIE, and Mr. GEPHART.

Text book, lectures, and assigned readings.

33. PRINCIPLES OF ECONOMICS. Three credit hours. Three terms. *M., W., F., at 8, 9, or 1.* Not open to first-year students.

Should precede all courses in Economics and Sociology except Economics 30, 31, and 32, and Sociology 1. Professor HAMMOND, Assistant Professor LOCKHART, Mr. GEPHART, and Mr. DORNEY.

Text-book, collateral readings, and individual investigations.

34. MONEY AND BANKING. Three credit hours. First term. Prerequisite, Course 33. *M., W., F., at 2.* Assistant Professor LOCKHART.

The value of money, monetary systems of the world, currency reform, and theory and history of banking, modern banking systems.

\*35. BANKING PRACTICE. Three credit hours. Second term. Prerequisite, Course 34. *M., W., F., at 2.* Mr. DORNEY.

\*36. THE MONEY MARKET. Three credit hours. Third term. Prerequisite, Course 34. *M., W., F., at 2.* Assistant Professor LOCKHART.

37. INDUSTRIAL ORGANIZATION. Three credit hours. First term. Prerequisite, Course 33. *M., W., F., at 9.* Professor HAMMOND.

A study of the development and internal organization of modern manufacturing enterprises with some consideration of the forces determining their location. Lectures, individual reports, and visits of inspection to local plants.

38. CORPORATION ORGANIZATION AND FINANCE. Three credit hours. Second term. Prerequisite, Course 33. *M., W., F., at 9.* Professor HAMMOND.

Methods of corporate organization and management, corporate capitalization and securities. The tendencies toward industrial consolidation, the forms and methods of the modern trust.

51. THE MONOPOLY PROBLEM. Three credit hours. Third term. Prerequisite, Course 38. *M., W., F., at 9.* Professor HAMMOND.

Monopolistic tendencies in modern industry. The problem of public regulation and control of industrial monopolies.

40. MERCANTILE INSTITUTIONS. Three credit hours. First and second terms. Prerequisite, Course 33. *M., W., F., at 11.* Professor HAGERTY.

The evolution and organization of mercantile institutions, with a study of the methods of commercial distribution and sale of products, including advertising, selling agencies, produce exchanges, etc.

41. COMMERCIAL CREDIT. Three credit hours. Third term. Prerequisite, Course 40. *M., W., F., at 11.* Professor HAGERTY.

Mercantile agencies, credit men's associations, bankruptcy legis-

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\*Not given in 1909-1910.

lation, drafts, bills of exchange, bills of lading, and other credit instruments.

42. PUBLIC FINANCE. Two credit hours. First and second terms. Prerequisite, Course 33. *Tu., Th., at 2.*

Public expenditures, revenue and debts, financial organization and administration.

43. FINANCIAL HISTORY OF THE UNITED STATES. Two credit hours. Third term. Prerequisite, Course 33. *Tu., Th., at 2.*

A study of the fiscal and monetary history of the country from colonial times to the present.

\*44. TRANSPORTATION. Three credit hours. Three terms. Prerequisite, Course 33. *M., W., F., at 9.* Professor HAMMOND.

The history and public character of transportation; water transportation; railway organization and administration; railway capitalization, rates, pools, mergers, and consolidations; railway commissions and public control; government ownership of railroads.

45. SEMINARY IN ECONOMICS. Two credit hours. Three terms. *Tu., 3 to 5.* Professor HAMMOND.

A course of investigation and research open to graduates and such advanced undergraduates as receive special permission. Recommended to students who have had two or three years work in Economics.

48. ACCOUNTING AND BUSINESS STATISTICS. Two credit hours. Three terms. Prerequisite, Course 33. *Tu., Th., at 8.* Mr. DORNEY.

An introduction to practical accounting, including the analysis and interpretation of business statements, and the use of statistics in commercial and industrial enterprises.

\*52. LABOR LEGISLATION. Three credit hours. First term. Prerequisite, Course 33. *M., W., F., at 1.* Professor HAMMOND.

A study of the labor laws of the United States and of the principal foreign countries, with a consideration of their economic and social causes and results.

\*39. LABOR ORGANIZATIONS AND EMPLOYERS' ASSOCIATIONS. Three credit hours. Second term. Prerequisite, Course 33. *M., W., F., at 1.* Professor HAMMOND.

The methods by which laborers and employers organize to secure control of the labor market. Trade union policies and methods. Collective bargaining. Industrial arbitration.

\*53. REMUNERATION OF LABOR. Three credit hours. Third term. Prerequisite, Course 33. *M., W., F., at 1.* Professor HAMMOND.

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\*Not given in 1909-1910.

A study of the wage system, with its attempted modifications. Time, piece, and progressive wages; profit-sharing, labor co-partnership.

54. INSURANCE. Two credit hours. Three terms. Prerequisite, Course 33. *Tu., Th., at 10.* Mr. GEPHART.

Principles of life insurance and its economic and social significance. Kinds of companies, policies, and policy contracts. Public regulation of life insurance companies. Fire, marine, accident, old age, and other forms of insurance.

55. MUNICIPAL ECONOMICS. Two credit hours. First and second terms. Prerequisite, Course 33. *M., F., at 10.* Assistant Professor LOCKHART.

Growth of cities in population and functions. Economic and social activities and the problems of modern cities. Private versus public ownership and operation of public utilities. Experience of American cities compared with that of foreign municipalities.

56. MUNICIPAL FINANCE. Two credit hours. Third term. Prerequisite, Course 55. *M., F., at 10.* Assistant Professor LOCKHART.

City expenditures; revenues from public industries, taxes, licenses, special assessments; city indebtedness, its growth and management; municipal statistics and accounts.

\*57. AMERICAN INDUSTRIES. Three credit hours. Second and third terms.

58. ADVANCED ACCOUNTING AND AUDITING. Three credit hours. Three terms. Prerequisite, Course 48. *M., W., F., at 8.* Mr. DORNEY.

Accounting systems for various types of industrial and financial institutions. The work of the certified public accountant and auditor, their problems and duties.

\*59. ECONOMIC RESOURCES OF THE UNITED STATES. Two credit hours. Three terms. Given in 1908-1909, and thereafter in alternate years. Prerequisite, Geology 17, and Economics 33. *Tu., Th., at 9.* Professor BOWNOCKER.

Metals, fuels, soils, etc., their distribution, abundance and uses; incidental treatment of their origin and geological relations.

60. ECONOMIC BIBLIOGRAPHY. One credit hour. Three terms. Prerequisite, Course 33. *W., at 4.* Mr. REEDER.

Use of catalogues, magazine indexes, society publications, United States and foreign government publications, state and municipal

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\*Not given in 1909-1910.

documents, with special reference to economic subjects. Lectures and reference problems.

61. **COMMERCE AND COMMERCIAL POLICY.** Three credit hours. Three terms. Prerequisite, Course 33. *M., W., F., at 1.* Mr. GEPHART.

A study of the growth of commerce, development of trade routes and trade centers, articles of commerce, commercial policies and their effect on industrial development; commercial institutions and agencies, methods of marketing goods in foreign countries and the settlement of trade balances. Especial attention will be given to the tariff policy of the United States and the extent and character of our foreign trade.

63. **BUSINESS LAW.** Two credit hours. Three terms. Prerequisite, Course 33. *Tu., Th., at 9.* Mr. DORNEY.

A study of the leading legal principles of interest to the business man to be found in contracts, agency, negotiable instruments, sales, bailments and carriers, partnership, corporations, etc.

## II. SOCIOLOGY

These courses are not open to first-year students. It is recommended that Course 1 be preceded by Economics 30, 31, 32, or 33, and Psychology 1, or Zoology 31.

1. **PRINCIPLES OF SOCIOLOGY.** Three credit hours. Three terms. *M., W., F., at 8, 9, or 3.* Professor HAGERTY, Assistant Professor MCKENZIE.

A study of the fundamental principles of sociology. Text-book, lectures, and individual investigations.

\*2. **HISTORY OF THE FAMILY.** Three credit hours. Second term. Prerequisite, Course 1. *M., W., F., at 8.* Mr. WALLIS.

A study of the matrimonial institutions of primitive society and the evolution of the family through the Greek, Roman, Mediæval, and Modern periods.

4. **DEPENDENTS AND DEFECTIVES.** Three credit hours. First term. Prerequisite, Course 1. *M., W., F., at 9.* Professor HAGERTY.

5. **CRIMINOLOGY.** Three credit hours. Second term. Prerequisite, Course 4. *M., W., F., at 9.* Professor HAGERTY.

A study of criminality, the cause of crime, means of diminishing crime, prison management and prison reform.

6. **ORGANIZED PHILANTHROPY.** Three credit hours. Third term. Prerequisite, Course 5. *M., W., F., at 9.* Professor HAGERTY.

A study of the various institutions or agencies organized to

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\*Not given in 1909-1910.

prevent dependency and crime, such as charity organizations, social settlements, the various church agencies, etc.

\*8. THE INDIAN. A study of primitive man. Three credit hours. First term. Prerequisite, Course 1. *M., W., F., at 1.* Assistant Professor MCKENZIE.

\*9. THE NEGRO. A study of tropical man. Three credit hours. Second term. Prerequisite, Course 1. *M., W., F., at 1.* Assistant Professor MCKENZIE.

\*10. THE IMMIGRANT. Three credit hours. Third term. Prerequisite, Course 1. *M., W., F., at 1.* Assistant Professor MCKENZIE.

7. SEMINARY IN SOCIOLOGY. Two credit hours. Three terms. *Tu., 3 to 5.* Open to graduates and advanced undergraduates. Prerequisite, Course 1. Professor HAGERTY.

This course is recommended to students who have had one or two years work in Sociology.

11. SOCIAL REFORM AND SOCIALISM. Three credit hours. Three terms. Prerequisite, Course 1, or Economics 33. *M., W., F., at 1.* Assistant Professor MCKENZIE.

Nineteenth century attempts at social reform, the theory of socialism, and the social function of the church.

\*12. BIBLICAL SOCIOLOGY. Three credit hours. First term. *M., W., F., at 8.* Mr. WALLIS.

A study of Old Testament History, showing the development of the idea of God in its relation to ancient Hebrew society.

\*13. ARYAN INSTITUTIONS. Three credit hours. Third term. *M., W., F., at 8.* Mr. WALLIS.

A study of the social institutions of the race to which the English-speaking peoples belong.

#### GRADUATE COURSES

\*50. DISTRIBUTION OF WEALTH. Three hours. Three terms. *M., W., F., at 11.* Professor HAGERTY.

A study of the development of economic theories concerning the distribution of the social product among the producers from the time of the mercantilists to the present time. The works of the leading writers of each period are read and discussed in class.

\*14. ADVANCED SOCIOLOGY. Two hours. Three terms. *M., W., at 2.* Assistant Professor MCKENZIE.

A rapid review of social theories from Plato to Spencer, with a more detailed study of the writings of recent sociologists.

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\*Not given in 1909-1910.

62. THE STATE IN ITS RELATION TO INDUSTRY AND LABOR. Two hours. Three terms. *M.*, 3 to 5. Professor HAMMOND.

A study of the trend of economic and legal thought concerning the part which the state should take in regulating and developing industry and labor. The results of the policy of non-interference and of the later tendency towards regulation in various countries, particularly those of Anglo-Saxon peoples.

47. GRADUATE SEMINARY IN ECONOMICS AND SOCIOLOGY. Graduate students and the instructors in the department will meet regularly for the presentation of the results of investigation, the review of current economic and sociological literature, and the discussion of current problems. Two hours. Three terms. Time to be arranged.

### ENGLISH

(Office, Room 116, University Hall)

PROFESSORS DENNEY, TAYLOR, MCKNIGHT, ASSOCIATE PROFESSOR GRAVES,

ASSISTANT PROFESSORS DUNCAN, BLANCHARD, LEIGHTON,

COOPER, BURNHAM, MR. BECK

1. PARAGRAPH WRITING AND ANALYSIS OF PROSE. Two credit hours. First term. *Tu., Th., or W., F.*, at 8; *Tu., Th.*, at 9, 10, 11, 1, or 3; *M., F.*, at 10, 11, or 2; *W., F.*, at 3. (Course 1 will be repeated in the second term and the third term for the benefit of those who fail, the class meeting Saturdays at 9 a. m., Room 119.) All instructors.

2. EXPOSITORY WRITING. Two credit hours. Second term. Prerequisite, Course 1. Same hours as for Course 1. (Course 2 is also offered in the summer term.) All instructors.

3. BRIEF MAKING AND WRITTEN ARGUMENTATION. Two credit hours. Third term. Prerequisite, Course 1. Same hours as for Course 1. (Course 3 is also offered in the summer term.) All instructors.

3a. PRINCIPLES OF PUBLIC SPEAKING. Two credit hours. First term. *W., F.*, at 1 or 3. Prerequisite, Courses 1, 2, 3. Assistant Professor BLANCHARD.

3b. DEBATING. Two credit hours. Second and third terms. *W., F.*, at 1 or 3. Prerequisite, Course 3a. Assistant Professor BLANCHARD.

4. ADVANCED ARGUMENTATIVE WRITING. Two credit hours. First, second, and third terms. *Tu., Th., at 11*. Prerequisite, Course 3. Assistant Professor DUNCAN.

4a. ADVANCED DEBATING. Two credit hours. First and second terms. *W., F., at 2.* Prerequisite, Course 3b. Assistant Professor BLANCHARD.

4b. EXTEMPORE SPEAKING. Two credit hours. Third term. *W., F., at 2.* Prerequisite, Course 3b. Assistant Professor BLANCHARD.

5. ADVANCED COMPOSITION: EXPOSITION AND CRITICISM. Two credit hours. First term. *Tu., Th., at 11.* Prerequisite, Course 1. Associate Professor GRAVES.

6. ADVANCED COMPOSITION: DESCRIPTION AND NARRATION. Two credit hours. Second and third terms. *Tu., Th., at 11.* Prerequisite, Course 1. Associate Professor GRAVES.

43. VERSIFICATION. Three credit hours. First term. *M., W., F., at 9.* Prerequisite, Course 4 (or 5 and 6), and 8. Associate Professor GRAVES.

44. SHORT STORY WRITING. Three credit hours. Second and third terms. *M., W., F., at 9.* Prerequisite, Course 4 (or 5 and 6), and 8. Associate Professor GRAVES.

8. GENERAL SURVEY OF ENGLISH LITERATURE. Three credit hours. Three terms. *M., W., F., at 8, 9, 11, or 3.* No prerequisite course. Professor McKNIGHT, Associate Professor GRAVES, Assistant Professors DUNCAN, LEIGHTON, BURNHAM.

45. AMERICAN LITERATURE. Two credit hour. Three terms. *Tu., Th., at 8.* No prerequisite course. Professor TAYLOR.

10. THE ENGLISH LYRIC (1500 to 1700). Two credit hours. First term. *Tu., Th., at 9.* Prerequisite, Course 8. Assistant Professor COOPER.

11. POETRY FROM 1700 TO 1770. (Exclusive of the drama.) Two credit hours. Second term. *Tu., Th., at 9.* Prerequisite, Course 8. Latin 22 is recommended to students taking this course. Assistant Professor COOPER.

12. ESSAYS AND LETTERS (Bacon to Burke). Two credit hours. Third term. *Tu., Th., at 9.* Prerequisite, Course 8. Assistant Professor COOPER.

13. BURNS AND SCOTTISH POETRY. Two credit hours. First term. *Tu., Th., at 2.* Prerequisite, Course 8. Assistant Professor DUNCAN.

17. BYRON. Two credit hours. Second term. *Tu., Th., at 2.* Prerequisite, Course 8. Assistant Professor DUNCAN.

21. SHELLEY AND KEATS. Two credit hours. Third term. *Tu., Th., at 2.* Prerequisite, Course 8. Latin 22 is recommended to students taking this course. Assistant Professor DUNCAN.

14. BURKE TO DEQUINCEY. Two credit hours. First term. *Tu., Th., at 10.* Prerequisite, Course 8. Professor DENNEY.

15. CARLYLE AND RUSKIN. Two credit hours. Second term. *Tu., Th., at 10.* Prerequisite, Course 8. Professor DENNEY.
16. ARNOLD, NEWMAN, AND PATER. Two credit hours. Third term. *Tu., Th., at 10.* Prerequisite, Course 8. Professor DENNEY.
18. WORDSWORTH. Three credit hours. First term. *M., W., F., at 8.* Prerequisite, Course 8. Professor TAYLOR.
19. TENNYSON. Three credit hours. Second term. *M., W., F., at 8.* Prerequisite, Course 8. Professor TAYLOR.
- Some attention will be paid to Arnold, Fitzgerald, and the Pre-Raphaelites.
20. BROWNING. Three credit hours. Third term. *M., W., F., at 8.* Prerequisite, Course 8. Professor TAYLOR.
22. THE ENGLISH BIBLE: Epic Forms. Two credit hours. First term. *Tu., Th., at 3.* No prerequisite course. Assistant Professor DUNCAN.
23. THE ENGLISH BIBLE: Lyric Forms. Two credit hours. Second term. *Tu., Th., at 3.* No prerequisite course. Assistant Professor DUNCAN.
24. THE ENGLISH BIBLE: Dramatic Forms. Two credit hours. Third term. *Tu., Th., at 3.* No prerequisite course. Assistant Professor DUNCAN.
26. HISTORY OF THE ENGLISH LANGUAGE. Two credit hours. First term. *Tu., Th., at 1.* No prerequisite course. Professor McKNIGHT.
27. ENGLISH WORDS. Two credit hours. Second and third terms. *Tu., Th., at 1.* No prerequisite course. Professor McKNIGHT.
28. OLD AND MIDDLE ENGLISH. Three credit hours. Three terms. *M., W., F., at 1.* No prerequisite course. Professor McKNIGHT.
31. CHAUCER. Three credit hours. First term. *M., W., F., at 2.* Open only to juniors, seniors, and graduates. Professor McKNIGHT.
33. SPENSER. Three credit hours. Second term. *M., W., F., at 2.* Open only to juniors, seniors, and graduates. Professor McKNIGHT.
37. MILTON. Epic and Prose. Three credit hours. Third term. *M., W., F., at 2.* Latin 22 is recommended to students taking this course. Open only to juniors, seniors, and graduates. Professor McKNIGHT.
35. SHAKESPEARE. Three credit hours. Three terms. *M., W., F., at 11.* Open only to juniors, seniors, and graduates. Professor DENNEY.
36. MODERN ENGLISH DRAMA. Two credit hours. Three terms.

*Tu., Th., at 11.* Open only to juniors, seniors, and graduates. Professor DENNEY.

Beginning with the younger contemporaries of Shakespeare, and extending to the present time.

38. THE NOVEL. Eighteenth Century. Four credit hours. First term. *M., Tu., Th., F., at 9.* Open only to juniors, seniors, and graduates. Professor TAYLOR.

39. THE NOVEL. First Quarter of Nineteenth Century. Four credit hours. Second term. *M., Tu., Th., F., at 9.* Prerequisite, Course 38. Professor TAYLOR.

40. THE NOVEL. Second Quarter of Nineteenth Century. Four credit hours. Third term. *M., Tu., Th., F., at 9.* Prerequisite, Courses 38 and 39. Professor TAYLOR.

49. SEMINARY. Two credit hours. Three terms. Topic for 1909-1910: English Drama Before Shakespeare. *Tu., at 4.* Open only to seniors and graduates. Must be elected for the year. Professor MCKNIGHT.

#### GRADUATE COURSES

61. THEORIES OF RHETORIC. Topic for 1909-1910: The Lyric. *W., at 4.* Associate Professor GRAVES.

62. OLD AND MIDDLE ENGLISH PHILOLOGY. Topic for 1909-1910: Metrical Romances. *Th., at 4.* Professor MCKNIGHT.

63. LITERARY PROBLEMS. Topic for 1909-1910: The Romantic Movement. *M., at 4.* Professor DENNEY.

64. CRITICISM. Topic for 1909-1910: Literature from 1875 to the present. *F., at 4.* Professor TAYLOR.

#### ENTOMOLOGY

(See Zoology and Entomology)

#### EUROPEAN HISTORY

(Office, Room 204, University Hall)

PROFESSOR SIEBERT, ASSISTANT PROFESSOR MC NEAL

1. MEDIAEVAL HISTORY TO 1300 A. D. Three credit hours. First term. *M., W., F., at 9, 11, 1, or 2.* Professor SIEBERT, Assistant Professor MC NEAL.

2. EUROPEAN HISTORY FROM 1300 TO 1648 A. D. Three credit hours. Second term. *M., W., F., at 9, 11, 1, or 2.* Professor SIEBERT, Assistant Professor MC NEAL.

3. EUROPEAN HISTORY FROM 1648 TO 1900 A. D. Three credit hours. Third term. *M., W., F., at 9, 11, 1, or 2.* Professor SIEBERT, Assistant Professor MC NEAL.

4. CONSTITUTIONAL HISTORY OF ENGLAND. Three credit hours. Three terms. *Tu., Th., F., at 10.* Prerequisite, Course 14, or Courses 1, 2, 3. Professor SIEBERT.

5. HISTORY OF GREECE. Two credit hours. Three terms. *Tu., Th., at 9.* Assistant Professor MCNEAL.

\*6. HISTORY OF ROME. Two credit hours. Three terms. *Tu., Th., at 9.* Assistant Professor MCNEAL.

Courses 5 and 6 will be given in alternate years.

7. THE PERIOD OF THE REFORMATION. Three credit hours. First term. *M., W., F., at 2.* Prerequisite, courses 1, 2, and 3, or course 14. Professor SIEBERT.

8. THE FRENCH REVOLUTIONARY AND NAPOLEONIC PERIODS, 1789-1815. Three credit hours. Second term. *M., W., F., at 2.* Prerequisite, courses, 1, 2, and 3, or course 14. Professor SIEBERT.

9. EUROPE IN THE NINETEENTH CENTURY. Three credit hours. Third term. *M., W., F., at 2.* Prerequisite, courses 1, 2, 3, or course 14. Professor SIEBERT.

11. EUROPE AND TURKEY: THE EASTERN QUESTION. Two credit hours. First term. *Tu., Th., at 11.* Prerequisite, Courses 1, 2, and 3, or equivalent. Professor SIEBERT.

10. EUROPE AND AFRICA, INDIA AND AUSTRALIA. Two credit hours. Second and third terms. *Tu., Th., at 11.* Prerequisite, courses 1, 2, and 3, or course 14. Professor SIEBERT.

14. HISTORY OF ENGLAND. Three credit hours. Three terms. *M., W., F., at 8.* Introductory course. Assistant Professor MCNEAL.

\*15. NORTHEASTERN EUROPE. Two credit hours. First and second terms. *Tu., Th., at 11.* Prerequisite, courses 1, 2, and 3, or course 14.

\*16. EUROPE AND ASIA: THE FAR EASTERN QUESTION. Two credit hours. Third term. *Tu., Th., at 11.* Prerequisite, courses 1, 2, and 3, or course 14.

17. THE DARK AGES, 400 A. D. TO 814 A. D. Three credit hours. First term. *M., W., F., at 3.* Prerequisite, courses 1, 2, 3. Assistant Professor MCNEAL.

18. THE FEUDAL AGE, 814 TO 1250 A. D. Three credit hours. Second term. *M., W., F., at 3.* Prerequisite, courses 1, 2, 3. Assistant Professor MCNEAL.

19. THE AGE OF THE RENAISSANCE, 1250 TO 1500 A. D. Three credit hours. Third term. *M., W., F., at 3.* Prerequisite, courses 1, 2, 3. Assistant Professor MCNEAL.

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\*Not given in 1908-1909.

20. HISTORY OF GERMANY. Two credit hours. Three terms. Time to be arranged.

21. SEMINARY IN MODERN EUROPEAN HISTORY. Topic for 1909-1910: England and Canada, 1783-1830. Two credit hours. Three terms. Open only by permission of instructor. Time to be arranged. Professor SIEBERT.

22. SEMINARY IN MEDIAEVAL HISTORY. Reading of the sources of some period in the Middle Age. Two credit hours. Three terms. Open only by permission of instructor. Time to be arranged. Assistant Professor MCNEAL.

### FRENCH

(See Romance Languages)

### GEOLOGY

(Office, Room 1, Orton Hall)

PROFESSOR PROSSER, PROFESSOR BOWNOCKER, ASSISTANT PROFESSOR HUBBARD, MR. MORSE

17. PHYSIOGRAPHY. Three credit hours. Three terms. Open to freshmen and sophomores only. *M., W., F., at 8 or 1; M., Tu., Th., at 10.* Field trips, Saturday mornings in first and third terms. In the second term, the Monday hour in each sections is replaced by laboratory work, time to be arranged. Professor BOWNOCKER, Assistant Professor HUBBARD, Mr. MORSE.

Physiographic features of the earth's surface, the ocean, and the atmosphere. Lectures and assigned readings, illustrated with models and lantern views. In the fall and spring terms, three field trips will be made, each trip taking the place of a recitation. In the winter term, the work will consist of two lectures, recitations or quizzes, and one laboratory period per week.

11. INORGANIC GEOLOGY. Three credit hours. First term. *M., W., F., at 9.* Prerequisite, Chemistry, either in a high school or college (Chemistry 7.) Professor BOWNOCKER.

Introductory course. Petrographical, structural, and dynamical geology. Study of common minerals and rocks. The work is illustrated with lantern views, models, and museum materials.

12. HISTORICAL GEOLOGY. Three credit hours. Second term. Lectures, *M., W., F., at 9.* Prerequisite, course 11. Professor PROSSER.

A general course in paleontological and stratigraphical geology, illustrated by lantern views, maps, and specimens. The develop-

ment of organisms and the classification and distribution of the geological formations, especially those of Ohio, are considered.

13. FIELD GEOLOGY. Three to five credit hours. Third term. Lectures, *M.*, at 9. Laboratory, *W.*, at 9. Field trips, *S.* Prerequisite, courses 11 and 12. Professor PROSSER and Mr. MORSE.

Field and laboratory study of the geological formations readily accessible from Columbus, and identification of fossils characteristic of different formations. This course is intended to acquaint the student with the ordinary methods of field investigation, and involves the collection and identification of specimens, the measurement of geological sections and the preparation of a report describing the region studied.

[Courses 11, 12, and 13 are considered as forming a general course in geology which is required before advanced work in physiography, historical or inorganic geology. Occasionally course 13 may be counted as graduate work for students entering from other colleges or universities.]

#### FOR GRADUATES AND UNDERGRADUATES

14. PALEONTOLOGY. Two to five credit hours. Three terms. Laboratory open afternoons, 1 to 4, and on certain days in the morning. Prerequisite, courses 11 and 12. Professor PROSSER and Mr. MORSE.

Careful training in systematic classification which may be used in the philosophical study of the development of plant and animal life, or as a means of becoming acquainted with the fauna and flora that characterize the various geological formations. At first the student devotes some time to conchology, studying recent shells in which the characters used in classification are well preserved, and after this preliminary work, fossils are studied. Fossils afford the most reliable data for identifying and correlating geological formations, and the critical study of faunas is a field especially adapted to independent research. Laboratory, museum, and field work.

15. AREAL GEOLOGY. Two to five credit hours. First and third terms. Field work, *S.* Laboratory open afternoons, 1 to 4. Prerequisite, courses 11, 12, 13, and 14. Professor PROSSER and Assistant Professor HUBBARD.

Instruction in the methods of preparing geological maps and reports for both the Paleozoic and Cenozoic groups. Outcrops are traced in the field and a colored geological map is prepared, together with sections showing the geological structure.

6. ECONOMIC GEOLOGY. Three credit hours. Second term. *M.*,

*W., F., at 11.* Prerequisite, courses 11, 12, and 13. Professor BOWNOCKER.

The nature of ores, their classification and origin. The metallic ores of the United States, their distribution, abundance, modes of occurrence and origin. The non-metals, coal, oil, gas, clay, lime, cement, building stone, etc. In the discussion of the non-metals, emphasis will be laid on the products of Ohio.

18. GLACIAL GEOLOGY. Three credit hours. Third term. Time to be arranged. Prerequisite, courses 11 or 17. Professor BOWNOCKER.

A study of glacial geology of North America and especially of Ohio. Primarily a field course. Lectures and assigned reading. The preparation of reports on work done in the field will constitute an important part of the course.

19. PETROGRAPHY. Two to five credit hours. Three terms. Laboratory open afternoons, 1 to 4. Prerequisite, Chemistry 7, Metallurgy 2, and Geology 11. Professor BOWNOCKER.

Optical crystallography, with practical determination of rock-forming minerals, macroscopically and microscopically. Study of the igneous rocks in the hand specimen and thin section. The preparation of thin sections.

21. ADVANCED PHYSIOGRAPHY. Three to five credit hours. Three terms. Time to be arranged. Prerequisite, course 17, and courses 11, 12 and 13, or 11, 12 and 13 concurrently. Assistant Professor HUBBARD.

Conferences and reports, reviews of literature, directed and independent excursions and laboratory work.

23. MINOR INVESTIGATIONS AND CURRENT LITERATURE. Two to five credit hours. One or more terms. Time to be arranged. A study of special topics and current literature in geology. Assigned readings, conferences and reports. (a) HISTORICAL GEOLOGY. Prerequisite, courses 11, 12 and 13 required. Course 17 is recommended. Professor PROSSER. (b) INORGANIC GEOLOGY. Prerequisite, course 6. Professor BOWNOCKER. (c) PHYSIOGRAPHY. Prerequisite, courses 17, 11, 12 and 13. Assistant Professor HUBBARD.

#### FOR GRADUATES

16. ADVANCED HISTORICAL GEOLOGY. Three to five credit hours. Three terms. Time to be arranged. Laboratory open afternoons, 1 to 4. Prerequisite, courses 11, 12, 13, and 14. Professor PROSSER.

Advanced work in paleontology and stratigraphical geology. Field work to be arranged with individual students and it is recom-

mended that a part of it be done during the summer vacation under the direction of the instructor in charge.

20. RESEARCH WORK. Three to five credit hours. Three terms. Prerequisite, preceding courses in inorganic or historical geology. Field, laboratory, and library study is offered along three lines. Outline of work and time will be arranged with individual students. (a) STRATIGRAPHY AND PALEONTOLOGY. The investigation of some field problem in stratigraphy with laboratory and library study or of some special subject in paleontology. Professor PROSSER. (b) ECONOMIC GEOLOGY. The investigation of some field problem in petroleum, natural gas, coal, or salt. Professor BOWNOCKER. (c) PHYSIOGRAPHY. Field problems, experimental studies in the laboratory or investigations in the literature. Assistant Professor HUBBARD.

### GERMANIC LANGUAGES AND LITERATURES (Office, Room 317, University Hall)

PROFESSOR RHOADES, ASSOCIATE PROFESSOR EISENLOHR, ASSISTANT PROFESSORS THOMAS AND BUSSE, MR. BUSEY, MISS BARROWS

1. ELEMENTARY GERMAN. Four credit hours. Three terms. *M., Tu., Th., F., at 9, 10, 11, or 2; Tu., W., Th., F., at 3.*

2. SCIENTIFIC READING. Four credit hours. Third term. *M., Tu., Th., F., at 9, 10, or 2.* Prerequisite, course 4 for the first and second terms.

4. INTERMEDIATE GERMAN. Four credit hours. Three terms. *Tu., W., Th., F., at 8; M., Tu., Th., F., at 9, 10, 11, or 2.* The 9 o'clock period will be dropped in the third term.

#### FOR ADVANCED UNDERGRADUATES AND GRADUATES

\*9. CLASSICAL DRAMA. Three credit hours. Three terms. *M., W., F., at 2.* Prerequisite, Course 4, or equivalent. Not open to freshmen.

\*10. MODERN PROSE AND DRAMA. Three credit hours. Three terms. *M., Tu., F., at 10.* Prerequisite, Course 4, or equivalent. Open to freshmen offering four entrance units in German. Assistant Professor THOMAS.

10a. PROSE COMPOSITION. One credit hour. Three terms. Freshmen will elect this in connection with Course 10 or 19. *Th., at 10.*

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\*Not given in 1909-1910.

11. FAUST. Three credit hours. First and second terms. *M., W., F., at 11.* Must be elected for both terms. Professor RHOADES.

12. PROSE COMPOSITION AND CONVERSATION. Two credit hours. Three terms. *Tu., Th., at 2 or 3.* Prerequisite, Course 4. Open only by permission. Associate Professor EISENLOHR.

13. ADVANCED PROSE COMPOSITION. Two credit hours. Three terms. *W., F., at 3.* Prerequisite, Course 12. Associate Professor EISENLOHR.

\*14. GOTHIC. One credit hour. Three terms. Time to be arranged. Assistant Professor THOMAS.

\*15. OLD HIGH GERMAN. Two credit hours. First and second terms. Time to be arranged. This, with Course 17, forms a natural sequence to 14. Assistant Professor THOMAS.

16. MIDDLE HIGH GERMAN. Two credit hours. First and second terms. *M., Th., at 3.* Assistant Professor BUSSE.

\*17. OLD SAXON. Two credit hours. Third term. Time to be arranged. Assistant Professor THOMAS.

19. RECENT AND CONTEMPORARY WRITERS. Three credit hours. Three terms. *M., Tu., F., at 10.* Prerequisite, Course 4, or equivalent. Professor RHOADES.

26. SEMINARY. Studies in Modern Literature. Two credit hours. Three terms. *Tu., at 4.* The work is continuous throughout the year and must be so elected in order to count for an advanced degree. Professor RHOADES.

28. GERMAN LYRICS AND BALLADS. Two credit hours. Second and third terms. *W., F., at 2.* Prerequisite, Course 4. Associate Professor EISENLOHR.

30. HISTORY OF GERMAN LITERATURE SINCE THE REFORMATION. Three credit hours. Third term. *M., W., F., at 11.* Professor RHOADES.

Graduates will present a special study of a single author or movement.

34. GENERAL PHONETICS. Two credit hours. Third term. *Tu., Th., at 3.* No prerequisite in German, and open to students of language from all departments. Miss BARROWS.

35. GOETHE'S LIFE AND WORKS. Two credit hours. Three terms. Prerequisite, course 4. *M., Th., at 2.* Assistant Professor THOMAS.

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\*Given in alternate years; Courses 15 and 17 not offered in 1909-1910.

36. SCHILLER'S LIFE AND WORKS. Two credit hours. Three terms. Prerequisite, course 4. *W., F., at 3.* Miss BARROWS.

\*37. LESSING'S LIFE AND WORKS. Two credit hours. Three terms. Prerequisite, course 4. *Tu., Th., at 3.* Associate Professor EISENLOHR.

\*38. DRAMAS OF HEINRICH VON KLEIST, GRILLPARZER AND HEBBEL. Two credit hours. Three terms. Prerequisite, course 4. *M., W., at 2.* Assistant Professor BUSSE.

39. VOLKSLIED. Two credit hours. First term. *W., F., at 2.* Prerequisite, course 4; course 28 is its natural sequence. Associate Professor EISENLOHR.

FOR GRADUATES ONLY

18. ROMANTIC WRITERS. Three credit hours. Three terms. Assistant Professor THOMAS.

40. GRADUATE SEMINARY. Two credit hours. Three terms. Professor RHOADES.

In 1909-1910 the subject will be Goethe's Faust.

Attention is directed to course 22 in Latin and to course 20 in European History. Students doing special work in German are particularly recommended to take the latter.

GREEK LANGUAGE AND LITERATURE

(Office, Room 307, University Hall)

PROFESSOR SMITH, PROFESSOR HODGMAN, PROFESSOR ELDEN

1. ELEMENTARY GREEK. Four credit hours. Three terms. *M., Tu., Th., F., at 11.* Professor ELDEN.

7. XENOPHON: The Memorabilia of Socrates; Exercises in Greek Prose. Four credit hours. First term. *M., Tu., Th., F., at 11.* Prerequisite, course 1. Professor SMITH.

8. HERODOTUS. Selections; with Studies in Greek History. Four credit hours. Second term. *M., Tu., Th., F., at 11.* Prerequisite, Course 7. Professor SMITH.

9. HOMER'S ODYSSEY. Selections from Books I-IX. Four credit hours. Third term. *M., Tu., Th., F., at 11.* Prerequisite, Courses 7 and 8. Professor SMITH.

10. LYSIAS: Eight Orations; with Studies in Attic Procedure. Three credit hours. First term. *Tu., Th., F., at 10.* Prerequisite, Courses 7 to 9. Professor SMITH.

11. PLATO: Apology, Crito, and Phædo. Three credit hours.

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\*Not offered in 1909-1910.

Second term. *Tu., Th., F., at 10.* Prerequisite, Courses 7 to 10. Professor SMITH.

12. HOMER'S ILIAD. Three credit hours. Third term. *Tu., Th., F., at 10.* Prerequisite, Courses 7 to 11. Professor SMITH.

13. THUCYDIDES: Book I or Book VII. Two credit hours. First term. Time to be arranged. Prerequisite, Courses 7 to 12. Professor HODGMAN.

14. DEMOSTHENES: Olynthiacs and Philippics. Two credit hours. Second term. Time to be arranged. Prerequisite, Courses 7 to 12. Professor HODGMAN.

15. GREEK LYRIC POETS, OR THEOCRITUS. Two credit hours. Third term. Time to be arranged. Prerequisite, Courses 7 to 12. Professor HODGMAN.

16. EURIPIDES: Alcestis, with lectures on the Attic drama. Two credit hours. First term. Time to be arranged. Prerequisite, Courses 7 to 12. Professor HODGMAN.

17. SOPHOCLES: Oedipus Tyrannus. Two credit hours. Second term. Time to be arranged. Prerequisite, Courses 7 to 12. Professor HODGMAN.

18. AESCHYLUS: Agamemnon. Two credit hours. Third term. Time to be arranged. Prerequisite, Courses 7 to 12. Professor HODGMAN.

19. EPIC POETRY. Two credit hours. First term. *W., F., at 2.* Prerequisite, Courses 7 to 12. Professor SMITH.

20. ARISTOPHANES: The Birds. Two credit hours. Second term. *W., F., at 2.* Prerequisite, Courses 7 to 12. Professor SMITH.

21. POST-CLASSICAL GREEK. Two credit hours. Third term. *W., F., at 2.* Prerequisite, Courses 7 to 12. Professor SMITH.

22. ANCIENT ART. Lectures on Architecture. Two credit hours. First term. Time to be arranged. No prerequisite course. Professor SMITH.

23. ANCIENT ART. Lectures on Sculpture. Two credit hours. Second term. Time to be arranged. No prerequisite course. Professor SMITH.

24. ANCIENT ART. Lectures on Sculpture. Two credit hours. Third term. Time to be arranged. No prerequisite course. Professor SMITH.

Courses 22, 23, and 24, are biennial, alternating with Courses 32, 33, and 34. They will not be offered again until 1911-1912.

25. GREEK PHILOSOPHY. Two credit hours. First term. *Tu., Th., at 2.* Prerequisite, Courses 7 to 12. Professor SMITH.

26. PLATO. Gorgias or Protagoras. Two credit hours. Second term. *Tu., Th., at 2.* Prerequisite, Courses 7 to 12. Professor SMITH.

27. STUDIES IN NEW TESTAMENT GREEK. Two credit hours. Third term. *Tu., Th., at 2.* Prerequisite, Courses 7 to 12. Professor SMITH.

28. HISTORICAL GRAMMAR. One credit hour. Three terms. Prerequisite, Courses 7 to 12. Professor HODGMAN.

\*32. MEDIAEVAL ART. Lectures on Architecture. Two credit hours. First term. No prerequisite course. Professor SMITH.

\*33. MEDIAEVAL ART. Lectures on Sculpture. Two credit hours. Second term. No prerequisite course. Professor SMITH.

\*34. MEDIAEVAL ART. Lectures on Painting. Two credit hours. Third term. No prerequisite course. Professor SMITH.

These courses, 32, 33, and 34, are biennial, alternating with Courses 22, 23, and 24.

35. PRIVATE LIFE OF THE GREEKS. Lectures. Two credit hours. First term. Time to be arranged. No prerequisite course. Professor SMITH.

36. HISTORY OF GREEK LITERATURE. (Epic, Lyric, and Dramatic Poetry.) Two credit hours. Second term. Time to be arranged. Professor SMITH.

37. HISTORY OF GREEK LITERATURE. (Historians, Philosophers, and Orators.) Two credit hours. Third term. Time to be arranged. Professor SMITH.

Courses 35, 36, and 37 are open to students without a knowledge of Greek.

### HISTORY

(See American History and Political Science and European History)

### ITALIAN

(See Romance Languages)

### LATIN LANGUAGE AND LITERATURE

(Office, Room 307, University Hall)

PROFESSOR DERBY, PROFESSOR HODGMAN, PROFESSOR ELDEN

1. CICERO: *De Senectute* and *De Amicitia*, or Selected Letters. Four credit hours. First term. Prerequisite, four units of preparatory Latin. *M., Tu., Th., F., at 10 or 11; Tu., W., Th., F., at 2.* Professors DERBY, HODGMAN, and ELDEN.

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\*Not given in 1909-1910.

2. LIVY: Books, 1, 2, 21, or 22, or the JUGURTHA OF SALLUST. Four credit hours. Second term. Prerequisite, course 1. *M., Tu., Th., F., at 10 or 11; Tu., W., Th., F., at 2.* Professors DERBY, HODGMAN, and ELDEN.

3. HORACE: Odes. Four credit hours. Third term. Prerequisite, courses 1 and 2. *M., Tu., Th., F., at 10 or 11; Tu., W., Th., F., at 2.* Professors DEBRY, HODGMAN, and ELDEN.

4. PLINY or CICERO: Selected Letters. Three credit hours. First term. *M., W., F., at 9 or 3.* Professors DERBY and HODGMAN.

5. TACITUS: Germania and Agricola, or Histories or CATULUS. Three credit hours. Second term. *M., W., F., at 9 or 3.* Professors DEBRY and HODGMAN.

6. TERENCE: Phormio; PLAUTUS, Trinummus or Captivi. Three credit hours. Third term. *M., W., F., at 9 or 3.* Professors DERBY and HODGMAN.

7. MARTIAL: Selected Epigrams. Two credit hours. First term. *Tu., Th., at 3.* Professor DERBY.

8. SUETONIUS. Two credit hours. Second term. *Tu., Th., at 3.* Professor DERBY.

9. TACITUS: Historiæ or Annales. Two credit hours. Third term. *Tu., Th., at 3.* Professor DERBY.

10. THE ROMAN NOVEL: Petronius; Apuleius. Two credit hours. First term. *Tu., Th., at 9.* Prerequisite, courses 1 to 3, and 4 to 6. Professor HODGMAN.

11. SENECA: Madea; Dialogues. Two credit hours. Second term. *Tu., Th., at 9.* Prerequisite, courses 1 to 3, and 4 to 6. Professor HODGMAN.

12. CICERO: Tusculan Disputations. Two credit hours. Third term. *Tu., Th., at 9.* Prerequisite, courses 1 to 3, and 4 to 6. Professor HODGMAN.

13. CICERO: De Natura Deorum. Two credit hours. First term. *W., F., at 8.* Prerequisite, courses 1 to 3, and 4 to 6. Professor ELDEN.

14. EPIC POETRY. Two credit hours. Second term. *W., F., at 8.* Prerequisite, courses 1 to 3, and 4 to 6. Professor ELDEN.

15. HORACE: Satires. Two credit hours. Third term. *W., F., at 8.* Prerequisite, courses 1 to 3, and 4 to 6. Professor ELDEN.

\*16. HORACE: Epistles. Two credit hours. First term. *Tu., Th., at 3.* Professor DERBY.

\*17. TACITUS: Annals. Two credit hours. Second term. *Tu., Th., at 3.* Professor DERBY.

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\* Not given in 1909-1910.

\*17a. LATE LATIN. Two credit hours. Third term. *Tu., Th., at 3.* Professor DERBY.

20. ROMAN PRIVATE LIFE. One credit hour. Three terms. *M., at 2.* Prerequisite, courses 1 to 3, and 4 to 6. Professor DERBY.

\*21. QUIZ AND REVIEW. One credit hour. Three terms. *M., at 2.* Prerequisite, courses 1 to 3, and 4 to 6. Professor DERBY.

This course will include brief outlines of Latin Literature, Ancient Geography, the field of Classical Philology, and a review of some less familiar parts of Latin Grammar.

22. ROMAN AND COMPARATIVE LITERATURE. One credit hour. Three terms. *Th., at 3.* Professor ELDEN.

Lectures on Roman Literature and its influence on modern writers.

Open not only to students of Latin, but also to those without a knowledge of Latin who desire to become acquainted with the broader outlines of Roman literature and its influence upon the literatures of France, Germany and England.

#### PRIMARILY FOR GRADUATES

\*30a. ROMAN PUBLIC LIFE. One credit hour. Three terms. *Th., at 8.* Professor DERBY.

A study, partly from the sources, of the growth of the Roman constitution, and of the methods of Roman administration.

\*30. LATIN LITERATURE. One credit hour. Three terms.

\*31. LATIN PHILOLOGY. Two credit hours. Three terms. *Tu., Th., at 3.*

32. HISTORICAL LATIN GRAMMAR. Sounds and inflections. One credit hour. Three terms. *Th., at 10.* Professor HODGMAN.

This course treats of pronunciation, ablaut, vowel and consonant changes—especially vowel weakening—accent, inflection, and other similar topics essential to the understanding of the principles which govern the development of the Latin language.

33. HISTORICAL LATIN GRAMMAR. Syntax. One credit hour. Three terms. *Tu., at 9.* Professor ELDEN.

Lectures on the problems connected with the origin and development of certain constructions in Latin syntax, a treatment along historical lines of the syntactic uses of the cases, moods, and tenses.

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\*Not given in 1909-1910.

Courses 32 and 33 are deemed essential for those who make Latin a major or minor subject of study.

34. ADVANCED LATIN COMPOSITION.

\*35. PRO-SEMINARY. Textual criticism; interpretation and criticism of Latin authors.

36. ROMAN RELIGION. One credit hour. Three terms. Lectures, and Fasti of Ovid. Professor HODGMAN.

\*37. LEGAL LATIN.

A study of the early Roman law, as given in Bruns' *Fontes*, and similar treatises; or of the Institutes of Justinian.

38. MEDIAEVAL LATIN.

39. THE ELEMENTS OF EPIGRAPHY. Two credit hours. Three terms. *Tu., Th., at 11.* Professor DERBY.

40. PALAEOGRAPHY. One credit hour. Three terms.

\*42. ROMAN SATIRE. Open to graduates and advanced undergraduates. Two credit hours. Three terms. Professor ELDEN.

Lectures and recitations: The history and development of Roman satire. The authors studied will be Horace, Juvenal, and Persius, together with the fragments of the earlier satirists.

Special topics related to the subjects named above may be pursued under supervision of the instructor, and graduate students, with consent of the department, may earn an additional credit hour in any course primarily for graduates. Such lines of reading and individual investigation will usually be supplementary to the regular graduate courses.

## MATHEMATICS

(Office, Room 314, University Hall.)

PROFESSOR BOHANNAN, PROFESSOR MC COARD, PROFESSOR SWARTZEL, PROFESSOR KUHN, ASSOCIATE PROFESSOR ARNOLD, ASSOCIATE PROFESSOR RASOR, ASSISTANT PROFESSOR PRESTON, ASSISTANT PROFESSOR BAREIS, ASSISTANT PROFESSOR MORRIS, MR. WEST

21. COLLEGE ALGEBRA. Three credit hours. First term. *M., W., F., at 9, 11, or 1.* Professor BOHANNAN, Professor McCOARD, Associate Professor RASOR, Assistant Professor MORRIS.

22. PLANE TRIGONOMETRY. Three credit hours. Second term. *M., W., F., at 9, 11, or 1.* Professor BOHANNAN, Professor McCOARD, Associate Professor RASOR, Assistant Professor MORRIS.

23. ELEMENTARY ANALYTICAL GEOMETRY AND CALCULUS. Three

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\* Not given in 1909-1910.

credit hours. Third term. *M., W., F., at 9, 11, or 1.* Prerequisite, course 22. Professor BOHANNAN, Professor McCOARD, Associate Professor RASOR, Assistant Professor MORRIS.

24. PROBLEMS ON ALL PAST WORK. One credit hour. Three terms. *F., at 10.* Associate Professor ARNOLD.

28. ANALYTICAL GEOMETRY AND CALCULUS. Three credit hours. Three terms. Prerequisite, courses 21, 22, 23, or 31, 32, 33. Associate Professor RASOR.

31. COLLEGE ALGEBRA. Five credit hours. First term. *M., Tu., W., Th., F., at 8, 9, 11, 1, or 2.* Professors BOHANNAN, McCOARD, SWARTZEL, KUHN, Associate Professors ARNOLD, RASOR, Assistant Professors PRESTON, BAREIS, MORRIS, Mr. WEST.

32. PLANE TRIGONOMETRY. Five credit hours. Second term. *M., Tu., W., Th., F., at 8, 9, 11, 1, or 2.* Professors BOHANNAN, McCOARD, SWARTZEL, KUHN, Associate Professors ARNOLD, RASOR, Assistant Professors PRESTON, BAREIS, MORRIS, Mr. WEST.

33. ANALYTICAL GEOMETRY. Five credit hours. Third term. *M., Tu., Th., F., at 8, 9, 11, 1, or 2.* Prerequisite, course 22 or 32. Professors BOHANNAN, McCOARD, SWARTZEL, KUHN, Associate Professors ARNOLD, RASOR, Assistant Professors PRESTON, BAREIS, MR. WEST.

41, 42, 43. CALCULUS. Five credit hours. Three terms. *M., Tu., W., Th., F., at 8, 11, or 1.* Prerequisite, courses 21, 22, 23, or 31, 32, 33. Professors BOHANNAN, McCOARD, SWARTZEL, KUHN, Associate Professors ARNOLD, RASOR, Assistant Professors BAREIS, MORRIS.

#### FOR ADVANCED UNDERGRADUATES AND GRADUATES

Prerequisite, Differential and Integral Calculus

34. DETERMINANTS. Three credit hours. First term. Assistant Professor BAREIS.

35. THEORY OF EQUATIONS. Three credit hours. Second and third terms. Professor McCOARD.

36, 37. PLANE AND SOLID ANALYTICAL GEOMETRY. Three credit hours. Plane Analytics will be studied the first term and Solid Analytics the second and third terms. Associate Professor RASOR.

38. ADVANCED CALCULUS. Three credit hours. First, second, and third terms. Assistant Professor MORRIS.

39. DIFFERENTIAL EQUATIONS. Three credit hours. First, second and third terms. Professor SWARTZEL.

40. PROJECTIVE GEOMETRY. Three credit hours. First and second terms. Professor BOHANNAN.

44. NON-EUCLIDIAN GEOMETRY. Three credit hours. Third term. Professor KUHN.

45. MODERN HIGHER ALGEBRA. Three credit hours. First, second, and third terms. Associate Professor ARNOLD.

\*47. THE MATHEMATICS OF INSURANCE AND INVESTMENTS. Two credit hours. Three terms.

48. THE THEORY OF STATISTICS. Two credit hours. Three terms. This course alternates with 34. Professor KUHN.

#### FOR GRADUATES

49. (a) INFINITE SERIES AND PRODUCTS; (b) THE FUNCTIONS OF A REAL VARIABLE; (c) CALCULUS OF VARIATIONS; (d) THE THEORY OF FUNCTIONS OF A COMPLEX VARIABLE; (e) ELLIPTIC FUNCTIONS; (f) POTENTIAL FUNCTION; (g) FOURIER'S SERIES AND SPHERICAL HARMONICS; (h) GROUPS; (i) THEORY OF NUMBERS; (j) HIGHER PLANE CURVES; (k) INVARIANTS; (l) DIFFERENTIAL GEOMETRY; (m) THE MATHEMATICAL THEORY OF ELECTRICITY AND MAGNETISM; (n) THE MATHEMATICAL THEORY OF LIGHT; (o) THE MATHEMATICAL THEORY OF SOUND; (p) THE HISTORY OF MATHEMATICS. Professors BOHANNAN, McCOARD, SWARTZEL, KUHN, Associate Professors ARNOLD, RASOR, Assistant Professors BAREIS, MORRIS.

#### MILITARY SCIENCE AND TACTICS (Gymnasium and Armory.)

CAPTAIN G. L. CONVERSE, U. S. A., RET.

The Military Department is open five days during each week of each term. Required of all students first and second year, unless excused by the Military and Gymnasium Board.

1. MILITARY DRILL. One credit hour. First and third terms. *M., Tu., W., at 11 or 4.*

2. MILITARY DRILL. One credit hour. Second term. Drill Regulations, *M., Tu., W., at 11 or 4*; Gallery Practice, *M., Tu., W., Th., 1 to 5.*

#### PHILOSOPHY (Office, Room 321, University Hall.)

PROFESSOR SCOTT AND PROFESSOR DAVIES.

100. ELEMENTS OF PHILOSOPHY. Three credit hours. First and second terms, followed in third term by Philosophy 101 (Logic). Open to students in the first and second years. *M., W., F., at 11.* Professor SCOTT.

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\*Not given in 1909-1910.

101. INTRODUCTORY LOGIC. Three credit hours. Third term. *M., W., F., at 11.* Professor SCOTT.

This course with Philosophy 100 or Psychology 1 forms a continuous course for a year. Recitations and lectures, with practical work in the analysis and criticism of reasoning processes.

103. ETHICS. Two credit hours. Three terms. *Tu., Th., at 11.* Professor SCOTT.

106. INTRODUCTION TO PHILOSOPHY. Three credit hours. Three terms. *M., W., F., at 2.* Prerequisite, Philosophy 103; or Philosophy 100 and 101; or Psychology 1 and Philosophy 101; or Psychology 1 and Philosophy 152. Professor SCOTT.

107. THEORY OF KNOWLEDGE. Three credit hours. First and second terms. *M. W. F., at 3.* Prerequisite, Philosophy 106. Professor SCOTT.

108. METAPHYSICS. Three credit hours. Third term. *M., W., F., at 3.* Prerequisite, Philosophy 106 and 107. Professor SCOTT.

112. ADVANCED ETHICS. Two credit hours. Three terms. *Tu., Th., at 3.* Prerequisite, Philosophy 103. Professor SCOTT.

115. AESTHETICS. Two credit hours. Three terms. *Tu., Th., at 2.* Open to first year students. Professor DAVIES.

118. PHILOSOPHY OF SCIENCE. Two credit hours. Three terms. *Tu., Th., at 2.* Prerequisite, one year of elementary work, including Philosophy 101. Alternative with Philosophy 119. Professor SCOTT.

119. PHILOSOPHY and RELIGION. Two credit hours. Three terms. *Tu., Th., at 2.* Prerequisite, at least one year of elementary work. Alternative with Philosophy 118. Professor SCOTT.

123. PHILOSOPHY OF MIND. Two credit hours. Three terms. *Tu., Th., at 11.* Prerequisite, Philosophy 152, and Psychology 1, or Philosophy 106. Professor DAVIES.

141. ETHICAL SEMINARY. Two credit hours. Three terms. Prerequisite, one year of elementary work and Philosophy 112. Professor SCOTT.

142. PHILOSOPHICAL SEMINARY. Two credit hours. Three terms. Prerequisite, one year of elementary work and Philosophy 106. Professor DAVIES.

151. HISTORY OF ANCIENT PHILOSOPHY. Three credit hours. First term. *M., W., F., at 2.* Open to first year students. Professor DAVIES.

152. HISTORY OF MODERN PHILOSOPHY. Three credit hours. Second and third terms. *M., W., F., at 2.* Open to first year students. Prerequisite, Philosophy 151. Professor DAVIES.

155. HISTORY OF CHRISTIAN PHILOSOPHY. Three credit hours.

Three terms. Time to be arranged. Open to first year students. Professor DAVIES.

157. PLATO. Two credit hours. Three terms. *Tu., Th., at 3.* Prerequisite, one year of elementary work, including Philosophy 151. Alternative with Philosophy 159. Professor DAVIES.

159. ARISTOTLE. Two credit hours. Three terms. *Tu., Th., at 3.* Prerequisite, one year of elementary work, including Philosophy 151. Alternative with Philosophy 157. Professor DAVIES.

161. DESCARTES TO KANT. Three credit hours. Three terms. *M., W., F., at 11.* Prerequisite, one year of elementary work, including Philosophy 152. Professor DAVIES.

166. KANT TO HEGEL. Three credit hours. Three terms. *M., W., F., at 11.* Prerequisite, one year of elementary work, including Philosophy 152. Professor DAVIES.

168. RECENT AND CURRENT PHILOSOPHY. Three credit hours. Three terms. *M., Th., F., at 10.* Prerequisite, one year of elementary work, including Philosophy 152. Professor SCOTT.

### PHYSICAL EDUCATION FOR MEN.

(The Gymnasium.)

DR. WINGERT, MR. KIBLER

1. PHYSICAL EDUCATION, consisting of a graded systematic course of healthful body-building exercise and recreation, is required two hours per week during the first year of each student's residence at the University, or until he has successfully completed three terms of this work.

All first year men are required to take a physical examination at opening of the Fall term.

### PHYSICAL EDUCATION FOR WOMEN.

(The Gymnasium.)

MISS SEARING.

1. GYMNASIUM. One credit hour. Three terms.

A physical examination is made of all women in the department by the director during the early part of the fall term. Well regulated physical exercises are given to meet the needs of every student; four hours per week during first year of student's residence at University is required. *M., Tu., Th., F., at 9, 10, or 11; W., 9 or 11.*

2. GYMNASIUM. One credit hour. Three terms. Four hours per week required of all young women during second year of course. *M., Tu., Th., F., 9, 10 or 11; W., 9 or 11.*

## PHYSICS

(Office, Room 24, Physics Hall.)

PROFESSOR COLE, PROFESSOR THOMAS, ASSOCIATE PROFESSOR KESTER, ASSISTANT PROFESSOR EARHART, ASSISTANT PROFESSOR BLAKE, DR. BAILEY, MR. SHEARD, MR. KELLOGG, MR. BARNES, MR. NUSBAUM.

2. GENERAL PHYSICS. Three credit hours. Three terms. *M.*, *W.*, at 9, or *Tu.*, *Th.*, at 11. One two-hour period experimental work and one quiz to be arranged. Prerequisite, Mathematics 21, 22, 23 or 31, 32, 33. Professor COLE, assisted by seven others.

4. ELECTRICITY AND MAGNETISM. Three credit hours. First term. *M.*, *Tu.*, *Th.*, at 10. Professor COLE.

11. GENERAL PHYSICS. Three credit hours. Three terms. Lecture, *W.*, at 11 or 2. Laboratory, *Tu.*, *Th.*, 8 to 10 or *Th.*, *F.*, 2 to 4. Assistant Professor BLAKE.

12. LABORATORY. Three to five credit hours. Three terms. *M.*, *Tu.*, *W.*, 1 to 4. Prerequisite, Course 2 or 11 (or may accompany Course 2). Associate Professor KESTER.

18. THE PRODUCTION AND USE OF ELECTRIC CURRENTS. Theory and practice. Three credit hours. Third term. Time to be arranged. Prerequisite, course 11 or some additional general laboratory course desirable. Professor THOMAS.

A non-technical course in dynamo currents, for teachers and for general science students.

## FOR ADVANCED UNDERGRADUATES AND GRADUATES

13. ADVANCED LABORATORY. Three to five credit hours. Three terms. Prerequisite, Course 2 or 11, and Course 12. Professor COLE, Associate Professor KESTER, Assistant Professor EARHART, Assistant Professor BLAKE.

\*14a. ADVANCED MECHANICS AND MOLECULAR PHYSICS. Three credit hours. Three terms. *Tu.*, *W.*, *Th.*, at 4. Prerequisite, Physics 2 or 11; Calculus precedes or accompanies. First term, Mechanics, Associate Professor KESTER; second term, Molecular Physics and Heat; third term, Electronic Theory, Assistant Professor EARHART.

This course alternates with 14c.

14c. ADVANCED LIGHT AND ELECTRICITY. Three credit hours. Three terms. *Tu.*, *W.*, *Th.*, at 4. Prerequisite, Physics 2 or 11; Calculus precedes or accompanies. First term, Light, Mr. SHEARD; second term, Electricity and Magnetism, Assistant Professor EAR-

HART; third term, Radioactivity, Professor COLE. This course alternates with 14a.

Courses 14a and 14c together constitute a two-year cycle, moderately advanced, covering the whole subject of Physics.

16. PHYSICAL SEMINARY. One credit hour. Three terms. Prerequisite, a year of college work in physics. Professor COLE.

\*21. THEORETICAL PHYSICS. An advanced course in Light. Two hours. Three terms. Prerequisite, Physics 2, and Mathematics 41, 42, 43, or equivalents. Dr. BAILEY.

28. THE THEORY AND PRACTICE OF ELECTRICAL MEASUREMENTS. Three to five hours. Three terms. Prerequisite, Physics 2, or equivalent, a course in Electrical Measurement, and Mathematics 41, 42, 43, or equivalent. Professor THOMAS.

PRIMARILY FOR GRADUATES

22. THEORY OF OSCILLATIONS WITH THEIR APPLICATIONS TO WIRELESS TELEGRAPHY. Three hours. Three terms. Physics 2, and Mathematics 41, 42, 43, or equivalents. Assistant Professor BLAKE.

23. POTENTIAL FUNCTION WITH SPECIAL REFERENCE TO ELECTRICITY AND MAGNETISM. Three credit hours. Three terms. Prerequisites, Physics 2, and Mathematics 41, 42, 43, or equivalents. Assistant Professor BLAKE.

24. CONDUCTION OF ELECTRICITY THROUGH METALS FROM THE STANDPOINT OF THE ELECTRONIC THEORY. Three credit hours. Three terms. Prerequisites, Physics 2, and Mathematics 41, 42, 43, or equivalents. Assistant Professor BLAKE.

25. THEORETICAL MECHANICS. Three credit hours. Three terms. Prerequisites, Physics 2, and Mathematics 41, 42, 43, or equivalents. Assistant Professor BLAKE.

26. THERMODYNAMICS AND ELECTROLYTIC CONDUCTION. Two credit hours. Three terms. Prerequisites, Physics 2, and Mathematics 41, 42, 43, or equivalents. Associate Professor KESTER.

Electrolytic Conduction in the third term follows the deduction of the laws of dissociation in the second term.

\*27. THEORY OF ELECTRICITY AND MAGNETISM. Three credit hours. Three terms. Prerequisites, Physics 2, and Mathematics 41, 42, 43, or equivalents. Associate Professor KESTER.

Courses 25, 26, 21 and 27 together form an advanced two-year cycle, covering the whole ground of physics.

15. RESEARCH LABORATORY. Three to five credit hours. Three

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\*Not given in 1909-1910.

terms. Prerequisites, two years of laboratory work in physics. Professor COLE, Professor THOMAS, Associate Professor FESTER, Assistant Professor EARHART, Assistant Professor BLAKE.

**POLITICAL ECONOMY**  
(See Economics and Sociology.)

**POLITICAL SCIENCE**  
(See American History and Political Science.)

**PSYCHOLOGY**  
(Office, Room 404, University Hall.)

PROFESSOR MAJOR, PROFESSOR HAINES, PROFESSOR DAVIES

1. **GENERAL PSYCHOLOGY.** Introductory Course. Three credit hours. First and second terms. *M., W., F., at 11 or 2.* Professor MAJOR, Professor HAINES.

This course, or the equivalent, is required for admission to all other courses in the department of Psychology. Lectures, demonstrations, and recitations. (For third term's work students may elect Philosophy 101, or Psychology 1a.)

1a. **ELEMENTARY EXPERIMENTS AND EXERCISES IN PSYCHOLOGY.** Three credit hours. Third term. *M., W., F., at 11 or 2.* Professor MAJOR, Professor HAINES.

3. **EXPERIMENTAL PSYCHOLOGY.** Three credit hours. Three terms. Lecture, *Tu., at 1*; Laboratory, *Tu., 2 to 4*, and *Th., 1 to 3.* Prerequisite, Psychology 1. Professor HAINES.

An experimental study of two or three sense fields, of attention, of reaction time, of geometric optical illusions, etc., for the first and second terms. In the third term each member of the course will take a small problem for investigation.

\*4. **MENTAL DEVELOPMENT.** Two credit hours. Three terms. Professor MAJOR.

This course is designed (1) to describe the characteristic features of the child mind, (2) to study the principles and empirical data of the development of the individual human mind.

7. **ABNORMAL PSYCHOLOGY.** Three credit hours. Second and third terms. *M., W., F., at 1.* Prerequisite, Psychology 1. Professor HAINES.

Psychological studies of nervous and mental diseases by lectures, recitations, and clinics.

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\*Not given in 1909-1910.

8. ANIMAL PSYCHOLOGY. Three credit hours. First term. *M., W., F., at 1.* Prerequisite, Psychology 1. Professor HAINES.

A systematic tracing of the evolution of mind by studying the senses, memory, accommodation, etc., in a graded series of animal forms.

10. SOCIAL PSYCHOLOGY. Three credit hours. First term. *M., W., F., at 3.* Prerequisite, Psychology 1. Professor HAINES.

The social factor in the development of personality, and the mental process involved in social development, including such topics as suggestion, imitation, invention, sympathy, modesty, the socially unfit, and the genius.

11. FOLK PSYCHOLOGY. Three credit hours. Second term. *M., W., F., at 3.* Professor HAINES.

The psychic factors involved in group activities, such as the play of children, art (especially of savages and barbarians), mob phenomena, family life, and ethnic groups.

12. THE PSYCHOLOGY OF REASONING. Three credit hours. Third term. *M., W., F., at 3.* Professor HAINES.

An inductive study of the method of thinking as shown by the history of science, and of the method of mental accommodation and invention in primitive man and animals.

14. ADVANCED PSYCHOLOGY. Two credit hours. Three terms. Time to be arranged. Prerequisite, Psychology 1. Professor DAVIES.

This course includes a discussion of the methods of Psychology, and a detailed consideration of the main psychological concepts—feeling, conation, perception, imagination, etc., both in themselves and in their relation to one another.

16. INDIVIDUAL PSYCHOLOGY. Two credit hours. Three terms. *Tu., Th., at 2.* Professor MAJOR.

A study of individual variations in mental capacity and development.

20. GENERAL PSYCHOLOGY. Advanced Course. Three credit hours. Three terms. *M., W., F., at 9.* Professor MAJOR.

This course is open to students who have completed Psychology 1, or the equivalent, and who wish to make a more intensive study than is practical in an introductory course, of certain topics selected from the field of general psychology.

#### FOR ADVANCED UNDERGRADUATES AND GRADUATES

31. RESEARCH IN EXPERIMENTAL PSYCHOLOGY. Two credit hours or more. Three terms. Professor HAINES.

The investigation of problems in any field of Psychology by the

aid of the experimental method. The student selects a problem in consultation with the instructor, who carefully considers the student's interests. Members of the laboratory assist each other as observers.

32. SEMINARY IN PSYCHOLOGY. Two to five credit hours. Three terms. Time to be arranged. Professor MAJOR, Professor HAINES.

This course is open only to advanced students in philosophy, psychology, or education.

33. GRADUATE COURSES IN PSYCHOLOGY. Three to ten credit hours. Three terms. Professor MAJOR, Professor HAINES.

These courses are to meet the needs of individual graduate students who are pursuing a major or minor study in the department of Psychology.

#### RHETORIC AND ENGLISH LANGUAGE.

(See English.)

#### ROMANCE LANGUAGES AND LITERATURES.

(Office, Room 305, University Hall.)

PROFESSOR BOWEN, PROFESSOR BRUCE, ASSSOCIATE PROFESSOR INGRAHAM,  
ASSISTANT PROEFSSOR PEIRCE, MR. EWINGTON, DR.  
FALORSI.

##### I. FRENCH.

1. ELEMENTARY FRENCH. Four credit hours. Three terms. Grammar: Thieme and Effinger's, or equivalent. Reader: Aldrich and Foster's, or Bowen's First Scientific. Historical and narrative prose; one or more prose comedies. *M., Tu., Th., F., at 9, 10, 11, or 2; Tu., W., Th., F., at 3.* All instructors in the department teach one or more sections of this course.

Stress laid upon the acquisition of a correct pronunciation, after which the energy of the student is directed toward the attainment of a full and accurate reading knowledge of the language. Grammar and composition made to contribute to this end. Sight reading emphasized.

2. MODERN FRENCH LITERATURE. Four credit hours. Three terms. *M., Tu., Th., F., at 10 or 11.* Prerequisite, Course 1, or equivalent. Professor BRUCE, Assistant Professor PEIRCE, Mr. EWINGTON.

The study of the literature as such now taken up. The work of the year includes the following subjects: (1) Contes; (2) The Novel (Balzac or Hugo); (3) Lyric Poetry, (Bowen's Modern

French Lyrics); (4) Romantic drama (Hugo). Prose composition. Systematic attention is given to syntax and idiom. Lectures supplement the work. Private reading required.

3. SCIENCE READING. Four credit hours. Third term. *M., Tu., Th., F., at 10.* Prerequisite, course 2, first and second terms. Assistant Professor PEIRCE.

A course of rapid reading introductory to the vocabulary of scientific literature.

\*4. FRENCH COMEDY OF THE SEVENTEENTH CENTURY. Three credit hours. First term. *M., W., F., at 8 or 11.* Given biennially, alternating with course 16. Prerequisite, courses 1 and 2. Professor BOWEN, Assistant Professor PEIRCE.

Lectures on the growth of French Comedy, with work centering upon Molière and Regnard. Collateral reading.

\*5. FRENCH TRAGEDY. Three credit hours. Second term. *M., W., F., at 8 or 11.* Given biennially, alternating with course 17. Prerequisite, courses 1 and 2. Professor BOWEN, Assistant Professor PEIRCE.

Corneille, Racine, and Voltaire. Critical study of Le Cid, Horace, Andromaque, Esther, and Zaïre. Collateral reading. Lectures.

\*6. SEVENTEENTH CENTURY PROSE. Three credit hours. Third term. *M., W., F., at 8 or 11.* Given biennially, alternating with course 18. Prerequisite, courses 1 and 2. Professor BOWEN, Assistant Professor PEIRCE.

Critical study of Descartes, Pascal, La Bruyère and others. Warren's Selections.

7. ADVANCED PROSE COMPOSITION. One credit hour. Three terms. *Tu., at 8 or 11.* Prerequisite, courses 1 and 2. Professor BOWEN, Assistant Professor PEIRCE.

Cameron's French Composition, followed by other selections. Dictation. Conversation.

\*8. PROSE OF THE ROMANTIC PERIOD. Two credit hours. First term. *Tu., Th., at 9.* Given biennially, alternating with course 11. Prerequisite, courses 1 and 2. Professor BRUCE.

\*9. RECENT FRENCH PROSE. Two credit hours. Second term. *Tu., Th., at 9.* Given biennially, alternating with course 12. Prerequisite, courses 1 and 2. Professor BRUCE.

Rapid reading, with lectures, the work centering upon such writers as Bazin, Daudet, Loti, and Zola.

\*10. PRACTICE IN SPEAKING AND WRITING FRENCH: Based on

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\*Not given in 1909-1910.

Daudet's stories. Two credit hours. Third term. *Tu., Th., at 9.* Students wishing to elect this course must have the consent of the instructor in charge. Given biennially, alternating with course 13. Professor BRUCE.

11. FRENCH TRAVEL WRITERS. Two credit hours. First term. *Tu., Th., at 9.* Given biennially, alternating with course 8. Prerequisite, courses 1 and 2. Professor BRUCE.

Scenes of travel from Gautier, Hugo, and Dumas. Gautier's *Voyage en Espagne* (Clarendon Press) and others.

12. EIGHTEENTH CENTURY PROSE. Two credit hours. Second term. *Tu., Th., at 9.* Given biennially, alternating with course 9. Prerequisite, courses 1 and 2. Professor BRUCE.

Selections from Voltaire (ed. Cohn and Woodward), or others.

13. ADVANCED CONVERSATIONAL PRACTICE: Based on stories of Coppée and Maupassant. Two credit hours. Third term. *Tu., Th., at 9.* Students wishing to elect this course must have the consent of the instructor in charge. Given biennially, alternating with course 10. Professor BRUCE.

\*14. FRENCH SEMINARY A. Two credit hours. Three terms. *M., 3 to 5.* Given biennially, alternating with course 15. Prerequisite, courses 1, 2, 4, 5, 6, and 7 or an equivalent. Professor BOWEN.

Studies in specific literary fields. The subject for 1910-1911 will be announced later.

15. FRENCH SEMINARY B. Two credit hours. Three terms. Given biennially, alternating with course 14. Prerequisite, courses 1, 2, 4, 5, 6, and 7, or an equivalent. Professor BOWEN.

Studies in Old French (with emphasis of *la Chanson de Roland*) and in the language and writers of the Sixteenth Century (Darmesteter et Hatzfeld, *Morceaux choisis*); special consideration of Montaigne.

16. FRENCH COMEDY OF THE EIGHTEENTH CENTURY. Three credit hours. First term. *M., W., F., at 8 or 11.* Given biennially, alternating with course 4. Prerequisite, courses 1 and 2. Professor BOWEN, Assistant Professor PEIRCE.

Lectures on the growth of French Comedy, with work centering upon Marivaux and Beaumarchais. Olmsted's edition of Marivaux's Comedies, with *le Barbier de Séville* and collateral reading.

17. FRENCH SOCIETY IN THE SEVENTEENTH CENTURY. Three credit hours. Second term. *M., W., F., at 8 or 11.* Given biennially, alternating with course 5. Prerequisite, courses 1 and 2. Professor BOWEN, Assistant Professor PEIRCE.

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\*Not given in 1909-1910.

Crane's Selections; with lectures. Special reference to the *Précieux* Movement. Collateral reading.

18. PRECURSORS OF FRENCH ROMANTICISM. Three credit hours. Third term. *M., W., F., at 8 or 11.* Given biennially, alternating with course 6. Prerequisite, courses 1 and 2. Professor BOWEN, Assistant Professor PEIRCE.

Rousseau, Chateaubriand (Bowen's *Itala* and *René*), and Madame de Staël. With lectures.

## II. ITALIAN.

1. ELEMENTARY ITALIAN. Two credit hours. Three terms. Grammar (Grandgent's or Young's), and Bowen's Italian Reader. Modern prose. Comedy (Goldoni). Time to be arranged. Students are advised to postpone the election of this course until they have completed French 1 or its equivalent. Professor BRUCE.

2. ADVANCED ITALIAN. Two credit hours. Three terms. Manzoni (*I Promessi Sposi*). Dante (*Vita Nuova, Inferno.*) With lectures. *M., W., at 3.* Prerequisite, course 1. Professor BRUCE.

## III. SPANISH.

1. ELEMENTARY SPANISH. Four credit hours. Three terms. Grammar (Hills and Ford's or Edgren's) and Ingraham's *Victoria y Otros Cuentos*. Easy prose and plays. Composition and conversation. *M., Tu., Th., F., at 9, 11, or 2.* Professor BOWEN, Associate Professor INGRAHAM, Mr. EWINGTON.

2. MODERN SPANISH LITERATURE. Four credit hours. Three terms. *Tu., W., Th., F., at 3.* Prerequisite, course 1, or equivalent. Associate Professor INGRAHAM.

The Modern Novel and Drama. Lectures covering a survey of the literature. Composition and conversation continued.

3. CLASSICAL PROSE AND DRAMA. Two credit hours. Three terms. *Tu., Th., at 2.* Prerequisite, courses 1 and 2. Professor BOWEN or Associate Professor INGRAHAM.

Cervantes (selections from *Don Quixote*), Calderon and others. Lectures.

## FOR GRADUATES ONLY

31. INTRODUCTION TO ROMANCE PHILOLOGY. Two credit hours. Three terms. Time to be arranged. Professor BOWEN.

Origin and distribution of the Romance Languages and dialects. Comparative phonology and morphology of French, Italian, and Spanish. Peculiarities of syntax. Lectures and reading of illustrative texts.

32. OLD PROVENÇAL. One credit hour. Three terms. Time to be arranged. Professor BOWEN.

Study of the language and literature of the Troubadours. Apel's Provenzalische Chrestomathie (2d edition).

33. HISTORY OF THE LITERARY MOVEMENT IN FRANCE IN THE FIRST HALF OF THE NINETEENTH CENTURY. Two credit hours. Three terms. Time to be arranged. Professor BRUCE.

The attention of all students in Romance Languages is called to course 22 in Latin, given by Professor Elden, on the subject of Roman and Comparative Literature. This course is cordially recommended.

### SOCIOLOGY

(See Economics and Sociology.)

### SPANISH

(See Romance Languages.)

### ZOOLOGY AND ENTOMOLOGY

(Office, Room 1, Biological Hall.)

PROFESSOR OSBORN, PROFESSOR LANDACRE, ASSOCIATE PROFESSOR HINE,  
MR. H. P. SEVERIN, MR. H. C. SEVERIN, MISS HOLLISTER

31. ELEMENTARY ZOOLOGY. Three credit hours. Three terms. Lecture, *Tu.*, *Th.*, at 8, or *M.*, *F.*, at 10. Laboratory, *Tu.* or *Th.*, 1 to 3. Professor OSBORN, Professor LANDACRE.

An introductory general course intended for general culture and as a foundation for the more advanced courses.

2. COMPARATIVE ANATOMY OF VERTEBRATES. Three to five credit hours. Three terms. Quiz, *W.*, at 1. Laboratory, *M.*, *Tu.*, *W.*, 1 to 4. Prerequisite, course 1, or equivalent. Professor LANDACRE.

12. GROSS ANATOMY OF THE FROG. Three to five credit hours. First term. Time to be arranged. Prerequisite, course 1. Professor LANDACRE.

13. MINUTE ANATOMY OF THE FROG. Three to five credit hours. Second term. Time to be arranged. Prerequisite, course 1. Professor LANDACRE.

14. EMRYOLOGY OF THE FROG. Three to five credit hours. Second term. Time to be arranged. Prerequisite, course 1. Professor LANDACRE.

15, 16, 17. INVERTEBRATE MORPHOLOGY. Three to five credit hours.

Three terms. Time to be arranged. Prerequisite, course 1. Professor OSBORN.

\*18. INVERTEBRATE EMBRYOLOGY. Three to five credit hours. Three terms. Laboratory. Time to be arranged. For graduates. Prerequisite, courses 1 and 2. Professor OSBORN.

19. VERTEBRATE EMBRYOLOGY. Karyokinesis, etc. Three to five credit hours. First term. Lecture, *Th.*, at 1; laboratory, *Th.*, *F.*, 1 to 4. Prerequisite, course 1. Professor LANDACRE.

20. VERTEBRATE EMBRYOLOGY: Chick and Mammal. Three to five credit hours. Second and third terms. Lecture, *Th.*, at 1; laboratory, *Th.*, *F.*, 1 to 4. Prerequisite, courses 1 and 19. Professor LANDACRE.

FOR ADVANCED UNDERGRADUATES AND GRADUATES.

34. EVOLUTION. Three credit hours. Three terms. Prerequisite, one year of zoology or equivalent. *M.*, *W.*, *F.*, at 8. Professor OSBORN, Professor LANDACRE.

A discussion of the facts, factors, and theories of the origin, development and distribution of animal life. The first term will deal mainly with adaptations and other phases of life fundamental to the theories of evolution; the second term especially with variation and heredity as factors in evolution, and also their practical applications in animal breeding; the third term mainly with distribution and relationships involving principles of phylogeny and classification.

\*21. COMPARATIVE NEUROLOGY. Three to five credit hours. Three terms. Time to be arranged. Prerequisite, course 1, or equivalent, but is open to advanced students in psychology and pedagogy. Professor LANDACRE.

22. CYTOLOGY. Three to five credit hours. Three terms. Time to be arranged. Prerequisite, course 31, and equivalent of 2, or 15, 16, 17. Professor LANDACRE.

23. ENTOMOLOGY. Three to five credit hours. Three terms. Time to be arranged. Prerequisite, course 1. Professor OSBORN.

24. ORNITHOLOGY. Two credit hours. Three terms. Lecture, *M.*, at 10. Laboratory, to be arranged. Associate Professor HINE.

25. RESEARCH WORK. Five to ten credit hours. Three terms. Prerequisite, course 1, and the equivalent of 2, or 15, 16, 17, or 19, 20. Professors OSBORN and LANDACRE.

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\* Not given in 1909-1910.

26. SEMINARY. One credit hour. Three terms. *Th., at 4.*  
Professor OSBORN, Professor LANDACRE.

FOR GRADUATES ONLY

30. INVERTEBRATE ZOOLOGY. Five credit hours. Time to be ar-  
ranged. Professor OSBORN.

33. VERTEBRATE EMBRYOLOGY. Three to five credit hours.  
Study of Karyokinesis, Germ layers, organogeny, etc. For gradu-  
ates only. Professor LANDACRE.

## ANNOUNCEMENTS OF OTHER DEPARTMENTS OF THE UNIVERSITY

The faculty of the College of Arts, Philosophy, and Science will accredit towards the degree of Bachelor of Arts a limited amount of work in the courses announced below. The student desiring to elect one or more of these courses is required to file a petition with his election card in June, showing the special purpose which he has in view, and bearing the written approval of the professor in charge of the course desired. The Executive Committee will not count towards the degree in Arts any course named below that is not allied to the work of the student in the College of Arts, Philosophy, and Science. But a student with no conditions outstanding who has at least forty-five term hours to his credit may, without petition, elect any course in the University on which he is prepared to enter, as extra work, not counting towards the degree of Bachelor of Arts.

### AGRICULTURAL CHEMISTRY

(Townshend Hall)

PROFESSOR VIVIAN, PROFESSOR WEBER, MR. BEAR, MR. R. C. COLLISON, MR. S. E. COLLISON

18. FOOD INSPECTION AND ANALYSIS. Three to five credit hours. Three terms. Prerequisite, Course 13, or an equivalent preparation in quantitative analysis. Professors WEBER and VIVIAN.

### ARCHITECTURE.

(Office, Brown Hall.)

PROFESSOR BRADFORD, ASSOCIATE PROFESSOR CHUBB, MR. HASKETT.

33. PHOTOGRAPHY. Two credit hours. First, second, and third terms. *M.*, *Tu.*, 1 to 3; *Th.*, *F.*, 1 to 3. Prerequisite, Elementary Chemistry.

36. PHOTOGRAPHY. Two or three credit hours. Second term. Prerequisite, Course 33 or an equivalent.

ART  
(Office, Hayes Hall.)

ASSOCIATE PROFESSOR LAVER, ASSISTANT PROFESSOR TITSWORTH

10. DESIGN AND COMPOSITION. Two credit hours. First term. Time to be arranged.

11. Continuation of 10. Two credit hours. Second term. Time to be arranged.

12. Continuation of 11. Two credit hours. Third term. Time to be arranged

13. DESIGN AND COMPOSITION. Two credit hours. First term. Advanced work in Art 10. Prerequisite, Art 10.

14. DESIGN AND COMPOSITION. Two credit hours. Second term. Advanced work in Art 11. Prerequisite, Art 11.

15. DESIGN AND COMPOSITION. Two credit hours. Third term. Advanced work in Art 12. Prerequisite, Art 12.

20. CHARCOAL DRAWING FROM STILL LIFE, NATURE, AND CASTS. One to three credit hours. First term. Time to be arranged.

21. CHARCOAL DRAWING FROM COSTUMED MODEL. One to three credit hours. Second term. Time to be arranged.

22. CHARCOAL DRAWING, LANDSCAPE AND STILL LIFE. One to three credit hours. Third term. Time to be arranged.

30. PENCIL DRAWING FROM STILL LIFE AND NATURE. One credit hour. First term. Time to be arranged.

31. PENCIL DRAWING FROM LIFE AND STILL LIFE. One credit hour. Second term. Time to be arranged.

32. PENCIL DRAWING OUT OF DOORS. One credit hour. Third term. Time to be arranged.

35. PAINTING IN OIL OR WATER COLOR. One to three credit hours. First term. Time to be arranged.

36. Continuation of 35. One to three credit hours. Second term. Time to be arranged.

37. LANDSCAPE. One to three credit hours. Third term. Time to be arranged.

40. CHARCOAL, PENCIL, OR PEN SKETCHING FROM LIFE.

CIVIL ENGINEERING  
(Office, Room 33, Brown Hall.)

ASSISTANT PROFESSOR CHAMBERLIN, MR. WARD

(Of the twenty-five courses offered in the Department of Civil Engineering, the following course is open to students of the College of Arts, Philosophy, and Science:)

21. SURVEYING. Three credit hours. Third term. *M., W., F., at 9.* Prerequisite, Mathematics 21, 22, 23 or equivalent. Assistant Professor CHAMBERLIN, Mr. WARD.

DOMESTIC SCIENCE  
(Hayes Hall)

PROFESSOR WARDALL, ASSOCIATE PROFESSOR WHITE, ASSOCIATE PROFESSOR FLINT

I. DOMESTIC SCIENCE

1. THE SELECTION AND PREPARATION OF FOODS. Three credit hours. First term. *M., at 8; M., Tu., 1 to 3, or Th., F., 1 to 3, or Tu., Th., 8 to 10.* Prerequisite, Chemistry 7 or 44. Professor WARDALL, Associate Professor WHITE.

A study of food principles, their occurrence in food stuffs, effects of heat, and fermentation, and the comparative cost of nutrients from various sources. Lecture and recitation work is combined with laboratory work. Laboratory fee, \$3.00.

2. Continuation of 1. Three credit hours. Second term. Time same as Course 1.

3. Continuation of 2. Three credit hours. Third Term. Time same as Course 1.

II. DOMESTIC ART

1. TEXTILES. Two credit hours. First term. Recitation, *W., at 11.* Laboratory sections, *Tu., W., or Th., 1 to 3.* Prerequisite, or concurrent, Art 10, 11, 12. Laboratory fee, \$1.00.

This course includes the study of fabrics from an historic, economic, and social standpoint. In the laboratory the making of garments involves the proper selection of material and the working out of suitable designs.

2. A continuation of Course 1. Two credit hours. Second term. Recitation *W., at 11.* Laboratory sections, time same as Course 1.

3. A continuation of Course 2. Two credit hours. Third term. Recitation, *W., at 11.* Laboratory sections, time same as Course 1.

ENGINEERING DRAWING  
(Office, Brown Hall.)

PROFESSOR FRENCH, ASSISTANT PROFESSOR LEWIS, ASSISTANT PROFESSOR ROGERS, ASSISTANT PROFESSOR MEIKEJOHN, MR. TIDBALL,  
MR. BOTT, MR. NORRIS

(Of the courses offered in the Department of Engineering Drawing, the following are open to students in the College of Arts, Philosophy, and Science:)

1. ELEMENTARY MECHANICAL DRAWING. Two credit hours. First term. *M.*, *F.*, 9 to 11; *Tu.*, *Th.*, 9 to 11; *M.*, *Tu.*, 1 to 3; *Th.*, *F.*, 1 to 3; *W.*, 1 to 3; *S.*, 8 to 10.

2. LETTERING. Two credit hours. Second term. Time same as Course 1. Prerequisite, Course 1.

3. PROJECTION DRAWING. Three credit hours. Third term. Lectures, *M.*, at 8; *W.*, at 8 or 9; *Th.*, at 8; *F.*, at 8 or 9. Practice, time same as Course 1.

15. TECHNICAL DRAWING. One and one-half credit hours. Second and third terms. *W.*, 1 to 3.

20. MECHANICAL DRAWING. One credit hour. First term. *W.*, 1 to 3.

24. FREEHAND DRAWING. One or two credit hours. First term.

33. PROJECTION DRAWING. Three credit hours. First term.

34. DESCRIPTIVE GEOMETRY. Three credit hours. Second term. Prerequisite, Drawing 33.

35. ADVANCED DESCRIPTIVE GEOMETRY. Three credit hours. Third term. Prerequisite, Drawing 34.

45. TECHNICAL DELINEATION. Pencil Rendering. Two credit hours. First term. Prerequisite, Drawing 26. *Tu.*, *Th.*, 10 to 12.

46. TECHNICAL DELINEATION. Elementary Pen and Ink Rendering. Two credit hours. Second term. Prerequisite, Drawing 45. *Tu.*, *Th.*, 10 to 12.

47. TECHNICAL DELINEATION. Brush Rendering. Two credit hours. Third term. Prerequisite, Drawing 45. *Tu.*, *Th.*, 10 to 12.

Courses 45, 46, and 47 are designed for students in Biological work and provide training in rendering in pencil, pen and ink, and brush.

### ELECTRICAL ENGINEERING

(Office, Engineering Laboratory)

PROFOSSOR CALDWELL, ASSOCIATE PROFESSOR HUNT, ASSISTANT PROFESSOR UPSON

30. DIRECT CURRENT DYNAMO MACHINERY. Four credit hours. Second and third terms. Prerequisite, Physics 4 and 6, or its equivalent. Associate Professor HUNT, Assistant Professor UPSON.

5. ELECTRICAL ENGINEERING. Four credit hours. First and second terms. Prerequisite, Mathematics 43, and Physics 2. Associate Professor HUNT, Assistant Professor UPSON.

15. ALTERNATING CURRENT CIRCUITS AND MACHINERY. Two credit hours. Third term. *Tu., Th., at 10.* Prerequisite, course 1. Professor CALDWELL.

16. Continuation of 15. Three credit hours. First term. *M., Tu., W., at 11.* Prerequisite, course 15.

17. Continuation of 16. Two credit hours. Second term. *M., W., at 8.* Prerequisite, course 16.

11. ADVANCED DYNAMO. LABORATORY. Three credit hours. Three terms. First, second and third terms. Must be accompanied by courses 16 and 17. Professor CALDWELL, Assistant Professor UPSON.

### HISTORY AND PHILOSOPHY OF EDUCATION

(Office, Old Mechanical Laboratory Building)

PROFESSOR GRAVES

#### FOR ADVANCED UNDERGRADUATES AND GRADUATES

1. HISTORY OF EDUCATION. Three credit hours. Three terms. *M., W., F., at 11.* Texts: Graves's A History of Education, Monroe's Text-books, and Quick's Educational Reformers.

3. EDUCATIONAL CLASSICS. Three credit hours. Three terms. *M., Tu., Th., at 11.* Prerequisite, course 1.

#### PRIMARILY FOR GRADUATES

4. HISTORY OF EUROPEAN SCHOOL SYSTEMS. Two credit hours. Three terms. *Tu., Th., at 9.* Prerequisite, courses 2 and 3.

6. SEMINARY IN THE HISTORY OF EDUCATION. One credit hour. Three terms. *Tu., at 2.* Prerequisite, course 4.

### MECHANICAL ENGINEERING

(Office, Engineering Laboratory)

PROFESSOR MAGRUDER

34. THERMODYNAMICS. Five credit hours. Second term. *M., Tu., W., Th., F., at 8.* Open only by permission of instructor. Professor MAGRUDER.

### MECHANICS

(Office, Room 219, School of Mines Building.)

PROFESSOR J. E. BOYD, ASSOCIATE PROFESSOR CODDINGTON, MR. BUCHER

1. STATICS. Five credit hours. First term. *M., Tu., W., Th., F., at 8, 9 or 11.* Prerequisite, Mathematics 43. Text-book, Hoskins' Theoretical Mechanics.

2. STRENGTH OF MATERIALS. KINETICS. Five credit hours. Second term. *M., Tu., W., Th., F., at 8, 9, or 11.* Prerequisite, Mc-

chanics 1. Text-book: Merriman's Mechanics of Materials, Cambria Steel.

3. KINETICS AND HYDRAULICS. Five credit hours. Third term. *M., Tu., W., Th., F., at 8, 9, or 11.* Prerequisite, Mechanics, 2. Text-books: Hoskins' Theoretical Mechanics, Goodman's Applied Mechanics.

4. ADVANCED THEORETICAL MECHANICS. Three credit hours. Three terms. For graduates and advanced undergraduates. Prerequisite, Mechanics 3 and Differential Equations.

#### METALLURGY AND MINERALOGY

(Office, School of Mines Building.)

PROFESSOR N. W. LORD, ASSOCIATE PROFESSOR SOMERMIER\*, ACTING ASSISTANT PROFESSOR DEMOREST, MR. M'QUIGG.

2. MINERALOGY. Three credit hours. Third term. *M., W., F., at 11.* Prerequisites, Mathematics 21, 22, 23, or equivalent, and Chemistry 7 or 44. Professor LORD.

3. DETERMINATIVE MINEROLOGY. Five credit hours. Third term. *M., Tu., 1 to 5.* Prerequisite, course 2. Professor LORD, Assistant Professor DEMOREST.

5. METALLURGICAL LABORATORY. Five credit hours. Three terms. *M., Tu., W., or W., Th., F., 1 to 4.* Prerequisite, Physics 2, and two years of Chemistry. Assistant Professor DEMOREST.

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\* Absent on leave 1908-1909.

## GENERAL INFORMATION

### THE BRYAN PRIZE

Through the generosity of Hon. William J. Bryan an annual prize of fifteen dollars is offered for the best essay on the principles underlying the form of government of the United States. Competition for this prize is open to all students of the University. For further information, make inquiry of the head of the department of American History and Political Science.

### HIGH SCHOOL COMMITTEE

In order to serve the schools of the state, the Faculty has provided a committee, one of the duties of which is to assist graduates of the University to teaching positions for which they are best fitted. Any student of the University intending to teach is invited to enroll his name with the committee on a blank provided for that purpose. Blanks may be obtained from the Executive Office. Graduates of the University who are already engaged in teaching are also cordially invited to correspond with the appointment committee with a view to bettering their positions. Correspondence is invited from Boards of Education and from Superintendents and Principals of schools in need of teachers. No fee is charged for the services of the committee.

### FEES AND EXPENSES

#### GENERAL CHARGES

All term dues must be paid at the opening of each term as a condition of admission to classes.

**INCIDENTAL FEE.**—A charge of six dollars a term, eighteen dollars a year, is made against all students, under the head of incidental expense. In the case of former students if this fee is not paid until the second day of the term one

dollar will be added, and for each succeeding day of delinquency fifty cents will be added.

**TUITION.**—Tuition is free in the College of Arts, Philosophy, and Science. But students who elect five hours or less in the College of Law pay a fee of \$7.50 per semester; more than five hours, \$22.50.

#### LABORATORY FEES

A fee of one dollar per term is charged in all laboratory courses. In addition to this fee, all students are required to pay for materials consumed. All first-year students in elementary chemistry (Chemistry 3, 7, 12) will be required to buy a \$10.00 card. This will cover the expense for the year with reasonable care in the use of supplies.

The laboratory courses, for each of which the fee is one dollar per term, are as follows: Anatomy and Physiology, 3, 4, 5, 9, 11; Astronomy, 2, 4, 5, 6; Bacteriology, 5, 6, 7, 10, 11, 12, 15; Botany, all courses; Chemistry, all courses except 11, 21, 30, 35, 40, 25, 26, 28, 36; Civil Engineering, 21; Domestic Science, 1, 2, 3; Domestic Art, 1, 2, 3; Engineering Drawing, all courses; Electrical Engineering, 7, 9, 11; Geology, 13, 14, 15, 16, 17 (Winter Term), 19, 20; Metallurgy, 3, 5; Physics, 11, 12, 13, 15; Zoology and Entomology, all courses except 26, 27.

#### LOCKER FEE

A fee of one dollar a term is required from those who make use of a locker in the gymnasium.

#### CADET UNIFORMS

The uniform with which the members of the battalion are required to provide themselves costs (without overcoat) about fourteen dollars. It is quiet in pattern, and is designed to be worn in place of civilian dress.

#### GRADUATION FEE

A fee of five dollars, to cover expense of graduation and diploma, is required of each person receiving one of

the ordinary degrees from the University, and this fee must be paid before the degree is conferred. A like fee of ten dollars is charged to each person receiving one of the higher graduate degrees.

#### AUDITOR'S FEES

On presentation to the Bursar of the written consent of the head of a department, and on the payment to the Bursar of an auditor's fee of one dollar, any person engaged in teaching is permitted to attend, in that department, any class or course (not to exceed three hours a week for one-half year) which is announced to be especially for teachers or those intending to teach.

#### ROOMS AND BOARD

Oxley Hall furnishes accommodations for about fifty-five women students for rooms and board. The dining room in the Hall accommodates about eighty. Applications for rooms or board should be made in advance to Miss Dora Eaton, House Superintendent.

The South Dormitory affords unfurnished rooms for students who desire to board themselves and thus reduce their expenses to a minimum. The expense of living in this way is about two dollars per week. Applications for rooms should be made to the President of the University.

Boarding clubs are also formed in the neighborhood of the University. Furnished rooms are rented at seventy-five cents to one dollar a week for each student, and the cost of table board is two dollars and seventy-five cents to three dollars and a quarter a week.

Board with furnished rooms can be obtained in private families, within convenient distance of the University, at rates varying from three and a half to five dollars per week. The ruling rate may be taken as four dollars.

## FELLOWSHIPS

To encourage graduates of this University, and of other similar and approved institutions in this State, to continue their studies and to undertake advanced work leading to the higher degrees, the University has established fellowships in several departments. These demand about one-half of the time of the fellow for laboratory or other similar assistance—as far as possible along the line of his graduate study. The remainder of his time is given to graduate work. The fellowships pay from \$150 to \$300 for the University year.

## CHRISTIAN ASSOCIATIONS

The Young Men's Christian Association has come to occupy a prominent place in university life. It has a membership of about four hundred men, and is affiliated with the World's Student Christian Federation. The Association House furnishes free for the use of its members a reading room, library, magazines and papers, piano, and telephone—a college home.

Religious meetings are held for men on Sunday afternoon; there are also frequent meetings for the promotion of social intercourse and good fellowship. Courses in systematic Bible study and in modern missions are offered. A most helpful feature of the work is that in the interest of new students at the opening of the school year. Desirable rooms and boarding places are found and posted for reference at the Association House. Representatives of the Association meet the trains, assist students in finding satisfactory locations, and endeavor in every way to make them feel at home. The Employment Bureau helps to find work.

A copy of the Students' Handbook, giving information about Columbus, the University, and the various college organizations and activities, will be sent free to prospective students. For this handbook or for further information, address the General Secretary of O. S. U. Y. M. C. A., 239 West Tenth avenue, Columbus, Ohio.

The Young Women's Christian Association holds religious meetings regularly at noon on Tuesdays. This organization is active and efficient in working for the higher interests of the young women. Young women planning to enter the University are invited to correspond with reference to board or rooms with the General Secretary, O. S. U. Y. W. C. A., University Hall, Columbus, Ohio.

### SELF SUPPORT

There is a large amount of work upon the University farm which is assigned to students, preference being given to those who are studying Agriculture. *But the University cannot promise work to all applicants.* Many students find work in private families, in offices, and in various occupations, by means of which they defray a portion of their expenses. A person of ability and energy, who is master of a trade, or who can do good work of any kind, can generally find employment, but prospective students are cautioned against depending wholly upon such uncertain sources of income.

Students should distinctly understand that where they attempt entire or partial self-support they should lengthen the term of study. An employment bureau is maintained at the University, where the names of those seeking work and of those desiring workers are recorded. Students should report to the Executive Office from time to time as to their needs and their work. This will enable the authorities to be more helpful than otherwise would be possible.

## LIST OF ACCREDITED AND RECOGNIZED SCHOOLS IN OHIO

Accredited schools are those four-year secondary schools whose courses of study have been found by inspection to be capable of satisfactorily preparing students for all colleges of the University.

Recognized schools are those three or four-year secondary schools whose courses of study are not capable of preparing students for all colleges of the University, but which have been found by inspection to cover satisfactorily 10 units of the requirements for admission.

These lists are subject to change from year to year as schools are revisited. Persons are advised, therefore, to consult the latest bulletins and catalogues of the University. A, shows that a school is accredited; R, that it is recognized.

School	Superintendent	Principal
Akron, A	H. V. Hotchkiss	D. C. Rybolt
Alliance, R	J. E. Morris	J. E. Vaughan
Andover, R	S. A. Harbourt	Mary McDonald
Arcanum, R	O. G. Hershey	C. W. Bingman
Ashland, R	John A. McDowell	R. C. Clark
Ashley, R	L. K. Wornstaff	Lydia Marsh
Ashtabula, A	E. A. Hotchkiss	
Ashtabula Harbor, R	Robert W. Paterson	John E. Ransom
Ashville, R	Stanley Lawrence	Stanley Lawrence
Athens, A	B. O. Skinner	Zella Foster
Baltimore, R	J. H. Horton	J. J. Wagner
Barberton, R	J. M. Carr	G. M. Korns
Barnesville, A	W. R. Butcher	A. H. Denbrock
Batavia, R	F. P. Timmons	Cecile Hulick
Beaver Creek Twp., (Greene Co.) R	R. S. Parsons	R. S. Parsons
Bedford, R	O. W. Kurtz	Miss G. L. Thomas
Bellaire, A	Wilson Hawkins	J. A. Jackson
Bellefontaine, A	J. W. MacKinnon	Annie A. Price
Bellevue, A	E. F. Warner	H. C. Bates
Berea, R	J. B. Mohler	A. G. Yawberg
Bethel Township, Clark Co., R	A. K. Morris	Hester Pherson
Bethel Township, Miami Co., R	R. W. Crist	Walter Peoples

School	Superintendent	Principal
Blanchester, R	C. L. Leahy	H. T. Miller
Bluffton, R	C. A. Arganbright	I. W. Geiger
Bowling Green, A	N. D. O. Wilson	Walter F. Shaw
Brookville, R	A. A. Maysilles	Elizabeth Zehring
Bryan, A	J. W. Wyandt	Orville Smith
Buchtel College		
Academy, R		C. O. Rundell
Bucyrus, A	W. N. Beethan	C. H. Miller
Byesville, R	B. M. Thompson	R. M. Marlowe
Cadiz, R	J. R. Lehman	S. L. Eby
Caldwell, R	C. J. Foster	Patrick Henry
Cambridge, A	H. Z. Hobson	John H. Harding
Camden, R	J. L. Fortney	L. D. Brouse
Canal Dover, A	F. P. Geiger	A. J. Huffman
Canal Winchester, R	A. A. McEndree	Sara Brown
Canton, A	John K. Baxter	Chas. A. Armstrong
Cardington, R	F. H. Flickinger	W. J. Bunker
Carey, R	A. J. Nowlan	Mattie Myers
Carroll, R	E. C. Dilger	J. H. Cooper
Carthage, R	C. A. Wilson	Louise Sherer
Cedarville, R	F. M. Reynolds	L. T. Marshall
Celina, R	S. Wilkin	J. W. Pogue
Centerburg, R	H. C. Fickell	Lottie Grandstaff
Central Institute (Cleveland), R		
Chardon, A	W. R. Davis	James G. Hobbie
Chicago, R	E. A. Evans	Leila B. Phinney
Chillicothe, A	F. E. C. Kirkendall	J. H. Booth
Cincinnati—	F. B. Dyer	W. H. Rice
Hughes, A		E. W. Coy
Walnut Hills, A		W. T. Harris
Woodward, A		E. D. Lyon
Cin. Tech. School, A		L. M. Ballou
Circleville, A	W. E. Sealock	D. B. Clark
Cleveland—	W. H. Elson	
Central, A		Edward L. Harris
East, A		B. U. Rannells
Lincoln, A		James W. McLane
South, A		G. A. Reuteneik
West, A		C. L. Lynch
Glenville, A		H. H. Cully

School	Superintendent	Principal
Cleveland Heights, A	C. A. Tilden	C. A. Tilden
Clintonville, R	W. S. Jennings	W. S. Jennings
Clyde, R	A. L. Gantz	Leroy Patton
College Corner, R	C. E. Gillespie	Edith Francisco
College Hill, A	W. H. Altamer	G. M. Tremper
College of Ursuline Sisters (Tiffin)		Sister Mary Agnes
Collinwood, A	Frank P. Whitney	F. C. Rulon
Columbiana, R	W. H. Richardson	Linda L. Snyder
Columbus—	Jacob A. Shawan	
Central, A		W. M. Townsend
East, A		J. D. Harlor
North, A		C. D. Everett
South, A		C. S. Barrett
Columbus School for Girls, A		{ Miss G. L. Jones Miss Alice Gladden
Columbus Grove, R	J. T. Begg	W. E. Stevens
Conneaut, R	Calvin T. Northrop	Louise E. Kahler
Corning, R	F. W. Huston	J. S. Saffell
Coshocton, A	C. E. Bryant	F. D. Garbison
Covington, A	L. J. Bennett	Frances Bowdle
Crestline, R	H. D. Clarke	G. A. Davis
Cumberland, R	G. E. Bell	W. S. Kingston
Cuyahoga Falls, R	W. H. Richardson	H. O. Bolich
Dayton, A	E. Brown	Chas. L. Loos, Jr.
Defiance, A	F. E. Reynolds	H. B. Mullholand
DeGraff, R	N. H. Stull	R. B. Curl
Delaware, A	W. McK. Vance	Maude I. Myers
Delphos, A	E. L. Mendenhall	I. F. Matteson
Delta, A	G. W. Hoffman	Viola B. Wilkins
Dennison, R	W. H. Angel	I. A. Wilson
Deshler, R	W. M. Schumacher	E. O. Fairchild
Dresden, R	E. E. Smock	Ida Warden
East Cleveland, A	W. H. Kirk	W. H. Kirk
East Liverpool, A	F. H. Warren	Florence Updegraff
Eaton, A	F. B. Bryant	John O'Leary
Eldridge's School (Worthington), R		Mrs. Gertrude D. Eldridge
Elyria, A	W. R. Comings	H. M. Ebert
Euclid, R	J. C. Oldt	Mary E. Gould

School	Superintendent	Principal
Fayette, R	C. D. Perry	E. M. Hoover
Findlay, A	J. W. Zeller	J. F. Smith
Fort Recovery, R	James Ross	Charles Sunderman
Fostoria, A	R. W. Solomon	Ida McDermott
Franklin School (Cincinnati), A		{ Joseph E. White G. S. Sykes
Fredericktown, R	W. W. Borden	W. W. Borden
Fremont, A	J. E. Collins	H. M. Lowe
Friends' Boarding School (Barnes- ville), R		B. J. Thomas
Galion, A	I. C. Guinther	E. H. White
Gallipolis, A	H. E. Conard	L. W. MacKinnon
Garrettsville, R	E. F. Robison	V. A. Libbey
Geneva, A	J. E. Fitzgerald	J. D. Marshall
Georgetown, R	A. F. Waters	T. E. Hughes
Germantown, A	C. W. McClure	S. M. Heitz
Gibsonburg, R	S. H. Benson	R. E. Stone
Girard, R	B. D. Hirst	W. Ray Wheelock
Glendale, A	E. H. Foster	E. H. Foster
Grand River Insti- tute, A		O. J. Luethi
Granville, R	J. R. Clements	Flora Hoover
Greenfield, A	E. W. Patterson	Roy Harris
Greenville, A	J. J. Martz	J. L. Selby
Greenwich, A	J. H. Diebel	Wm Tait
Grove City, R	A. C. Fries	C. F. Neiswender
Groveport, R	M. C. Warren	J. F. Paxton
Hamilton, A	Darrell Joyce	W. P. Cope
Harmony Township (Clark Co.), R	David Neer	Carlton Henry
Harrison, R	Thos. P. Pierce	Mary A. Curran
Harrison Twp., (Mont. Co.), R	D. W. Klepinger	W. H. Leiter
Harrison Twp (Preble Co.), R	C. S. Bunger	C. A. Huffman
Hartwell, A	J. S. Trisler	J. C. Mauchley
Hicksville, R	C. C. Nardin	A. Z. Penrose
Highland, R	C. W. Johnson	Anna G. Smith
Hilliards, R	Chauncey Lawrence	J. B. Phillips

## OHIO STATE UNIVERSITY

School	Superintendent	Principal
Hillsboro, A	W. E. Arter	J. B. Conard
Home City, R	J. O. Falkenburg	Clara E. Falkenburg
Hudson, R	T. F. Leonard	Marion Stockwell
Ironton, A	S. P. Humphrey	T. Howard Winters
Jackson, A	J. E. Kinnison	M. A. Henson
Jefferson, A	H. S. Foote	Mary I. Hoskins
Jeffersonville, R	M. E. Wilson	Mrs. Mary A. McCoy
Kent, A	R. P. Clark	W. A. Walls
Kenton, A	N. E. Hutchinson	Joseph T. Glenn
Kingston, R	C. M. Agler	Anna K. Korst
Kingsville, R	W. B. Simcox	
Kirtland, R	A. R. Morris	
Lakeside, A	H. O. Hannah	Margaret Hull
Lakewood, A	J. M. H. Frederick	H. W. Kennedy
Lancaster, A	H. A. Cassidy	W. C. Brashares
Lebanon, R	J. M. Hamilton	J. W. Lyle
Leetonia, R	J. W. Moore	C. C. Kochheiser
Leipsic, R	W. S. Sackett	Le Roy Buckingham
Lexington, R	H. H. Phelps	David Frasher
Lima, A	J. A. Davidson	S. Steffens
Lima Twp., (Licking Co.), R	E. T. Osborn	A. R. Shadle
Lisbon, A	G. M. Bingham	H. S. Moffitt
Lockland, A	S. T. Dial	Howard Hollenbach
Logan, A	H. F. Silverthorn	Chas. C. Garman
London, A	Wm. McClain	Marion Schlesinger
Lorain, R	A. C. Eldredge	D. J. Boone
Madison, R	Geo. C. Von Beseler	Lois Ellet
Madison Township (Pickaway Co.), R	Charles C. Evans	Charles C. Evans
Madisonville, A	C. M. Merry	(Mrs.) J. M. Bryan
Mad River Township (Enon Village), R	J. R. Clarke	J. R. Clarke
Malta, R	George M. Strong	L. E. Coulter
Mansfield, A	H. H. Helter	Harland E. Hall
Mantua, R	C. F. Becker	Alice M. Chalker
Marietta, A	J. V. McMillan	W. H. Maurer

School	Superintendent	Principal
Marion, A	H. L. Frank	C. H. Winans
Martins Ferry, A	L. E. York	O. C. Hursh
Marysville, A	L. B. Demorest	D. H. Sellers
Massillon, A	C. L. Cronebaugh	Goffrey A. Lyon
Mechanicsburg, A	J. W. Bowen	W. G. Snavley
Medina, A	C. C. Carlton	Charles Bulger
Miamisburg, A	W. T. Trump	Harris V. Bear
Middleport, R	A. W. McKay	Sara R. Brown
Middletown, A	Arthur Powell	Geo. C. Stahl
Milford, R	J. L. Fortney	L. D. Grannis
Millersburg, A	O. O. Fisher	A. W. Elliott
Montpelier, R	T. G. Paseo	F. W. Leist
Mt. Gilead, R	C. B. Stoner	F. J. Ryan
Mt. Pleasant, R	F. D. Ring	C. E. Hoskinson
Mt. Sterling, R	Frank E. Wilson	Kathryn Weber
Mt. Vernon, A	J. S. Alan	R. E. Offenhauer
Napoleon, A	P. C. Zemer	F. W. Leist
Nelsonville, A	Aaron Grady	O. C. Jackson
Newark, A	J. D. Simkins	T. Otto Williams
New Bremen, R	C. F. Limbach	J. Halsema
New Carlisle, R	Alfred Ross	Ada B. Koontz
New Holland, R	G. A. Bricker	E. N. Dietrich
New Lexington, R	J. M. Gordon	E. C. Bussert
New London, A	W. H. Mitchell	Stella M. Townsend
New Lyme Institute, A	G. C. Maurer	H. C. White
New Philadelphia, A	S. L. Turnipseed	G. A. Wyly
New Richmond, R	J. L. Cadwallader	Margueret T. Rowell
New Vienna, R	F. J. Roller	Clifford Thompson
Niles, R	G. L. Brown	W. H. C. Newington
North Baltimore, A	A. D. Beechy	Elizabeth Brown
Norwalk, R	W. S. Cadman	James E. Cole
Norwood, A	H. H. Hoffman	W. W. McIntire
Oak Harbor, R	R. L. Rawdon	(Mrs.) Sarah R. Gill
Oberlin, A		W. H. McCall
Oberlin Academy, A		J. F. Peck
Ohio Military Institute, R	A. M. Henshaw	S. P. C. Roberts
Orrville, R	A. H. Etting	A. J. Gerber

School	Superintendent	Principal
Osborn, R	W. H. Batson	Winifred Creamer
Ottawa, A	G. J. Keinath	L. F. Gehres
Oxford Col. Acad., A	Jane Sherzer	Catherine Cox
Painesville, A	F. H. Kendall	A. H. Mabley
Pandora (Riley Township), R	C. D. Steiner	Cary O. Altman
Pataskala, R	E. E. Atwell	J. C. Evans
Pemberville, R	D. J. Williams	Wynonah Thompson
Perrysburg, R	D. A. Haylor	Olive Woodard
Piqua, A	J. R. Beachler	D. R. Ellabarger
Plain City, R	J. A. Runyan	Lola A. Smythe
Pleasant Hill, R	S. C. Morton	J. H. Beeson
Pleasant Ridge, A	F. L. Simmerman	C. W. Andrews
Pleasantville, R	E. L. Porter	Dollie Hooper
Pomeroy, R	C. T. Coates	Charlotte M. Ward
Port Clinton, R	C. C. Underwood	W. D. Galliland
Portsmouth, A	Frank Appel	
Quaker City, R	W. G. Wolfe	J. C. Eagleson
Ravenna, A	E. O. Trescott	H. B. Turner
Reynoldsburg, R	Wm. S. Coy	Lucy Brinkerhoff
Richwood, R	R. H. Allison	B. C. Smith
Ripley, R	R. B. Smith	H. L. Geesling
Sabina, R	M. J. Flannery	Leo E. Plymire
Salem, A	J. S. Johnson	B. F. Stanton
Salineville, R	F. W. Reinoehl	Edna Walls
Sandusky, A	H. B. Williams	Geo. C. Dietrich
Shelby, A	S. H. Maharry	D. J. Schaeffer
Sidney, A	Herbert R. McVay	Lee A. Dollenger
Smead School (Toledo), A	Mary E. Smead	Rose Anderson
Somerset, R	W. L. Atwell	R. E. Beck
South Charleston, R	H. W. Paxton	Mrs. E. W. Bradley
Spencerville, R	Thos. J. Class	Wm. Carolus
Springfield, A	Carey Boggess	C. C. Patterson
Steubenville, A	R. L. Ervin	J. Vernon Cox
St. Mary's, A	C. C. McBroom	J. Howard Spohn
St. Paris, R	Jas. H. Fortney	Florence Hunter
St. Raphael's School, A	J. J. Phillips	Sister Rosetta
Sunbury, R		Milton Utley

School	Superintendent	Principal
Swanton, R	C. O. Castle	L. W. Bates
Tiffin, A	C. A. Krout	H. H. Frazier
Tippecanoe City, R	E. R. Rike	A. C. Pense
Toledo, A	Chas. L. Van Cleve	Wm. B. Guitteau
Troy, A	C. W. Cookson	Edward M. Traber
Uhrichsville, A	L. E. Everett	C. W. Jackson
Union City (Ind.), A	W. H. Sidebottom	Edith Huston
University School (Avond., Cin.) ,A		William E. Stillwell
University School (Cleveland), A		Harry A. Peters
Upper Sandusky, A	R. J. Kiefer	E. L. Wolff
Urbana, A	I. N. Keyser	H. N. Morton
Urbana Univ., A	Paul H. Seymour	Russell Eaton
Ursuline Acad. (Brown Co.), R		Sister M. Baptista
Utica, A	F. P. Householder	
Van Wert, A	J. P. Sharkey	Orrin Bowland
Wadsworth, R	A. J. Krabill	Frank L. Lytle
Wapakoneta, A	Charles Haupert	Mary O. Conrath
Warren, A	C. E. Carey	F. E. Ostrander
Washington C. H., A	James T. Tuttle	Frederic C. Peters
Wauseon, A	C. J. Biery	Orille Eastman
Waverly, R	J. F. Henderson	W. C. Dyer
Wellington, A	R. H. Kinnison	Elizabeth Day
Wellston, A	E. S. McCall	J. W. Whiteside
Wellsville, A	J. L. MacDonald	Ruby C. Mason
West Alexandria, R	L. D. Brouse	Clara Smith
Westerville, R	Lew. W. Warson	J. F. Nave
West Jefferson, R	L. C. Dick	Maie Walker
West Mansfield, R	O. H. Maffet	Mary J. Holloway
West Milton, R	Lee Waldorf	C. H. Teach
West Unity, R	W. A. Salter	Mable Tinkham
Willoughby, A	S. D. Shankland	Edward M. Ottis
Wilmington, R	E. P. West	F. P. Blair
Woodsfield, R	H. J. Scarborough	W. G. Wolff
Wooster, A	D. L. Thompson	Laura B. Kean

School	Superintendent	Principal
Worthington, R	J. J. McDonald	Arthur L. Sperry
Wyoming, A	C. S. Fay	Evelyn M. Prichard
Xenia, A	Edwin B. Cox	Geo. J. Graham
Youngstown, A	N. H. Chaney	Wells L. Griswold
Zanesville, A	W. D. Lash	Ira C. Painter

For a list of the schools outside of Ohio on the accredited list of the North Central Association of Colleges and Secondary Schools see the University Catalogue.







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